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Measurement of Financial Services in 2008 SNA − Implementation Issues

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Abstract

Share of the 'Financial services' sector has grown at a much faster rate than other sectors during the recent years in the Indian economy and has increased from 1.1 per cent in 1950-51 to 6.1 per cent in 2014-15. This paper proposes to discuss the conceptual issues relating to the measurement of output of financial services as per the latest international Standard, the 2008 System of National Accounts (SNA). Implementation of the recommendations of 2008 SNA in the Indian National Accounts is discussed inter-alia.

Output of financial services is mostly not defined as sales or receipts from the activity. For non-market activities component, the output is obtained conceptually at cost. For financial intermediaries, like banks, the output is obtained as the sum of Financial Intermediary Services Indirectly Measured (FISIM) and direct service charges receivable.

Financial services that function with their own funds were not recognized in 1993 SNA but are now recognized in 2008 SNA by redefining the FISIM. Beside corporate sector certain unorganized/ informal sector financial activities that function with their own funds like money lenders, chit fund, etc. have significant presence in India and most developing countries in Asia and Africa, thus their contribution needs to be incorporated in the output of total financial services. Improved methodology using new data bases for estimating unorganized activities is now adopted in Indian national accounts.

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1. Introduction

1.1. Financial Services Sector in Indian National Accounts covers all activities of Tabulation Category K of National Industrial Classification (NIC), 2008 (consistent with International Standard Industrial Classification (ISIC), Rev.4, Tabulation category K, Div. 64). As per the 2008 System of National Accounts (SNA), financial institutions are financial corporations classified as: Central bank (the RBI in the Indian context); Deposit-taking corporations; Money Market Funds (MMF); Non-MMF investment funds; Other financial intermediaries; Financial auxiliaries; and Captive financial institutions, each one further categorized into public, national private and foreign controlled units; and Insurance corporations and Pension funds. Emergence of a significant number of non-financial and financial service-producing industries leading to rapid expansion of the service sector is a relatively recent phenomenon in the Indian economy. Whereas share of the 'Financial, real estate and business services' sector has grown at a much faster rate than other sectors during the recent years in the Indian economy and has increased from 5.8 per cent in 1950-51 to 21.0 per cent in 2014-15, the financial services (banking and insurance) alone has increased from 1.1 per cent in 1950-51 to 6.1 per cent in 2014-15 (see Table 1).

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1.2. As a matter of fact for most economies, the service sector activities in general and financial services in particular account substantially in terms of contribution to gross domestic product/ total gross value added as well as share in the total employment. Data on service sector activities are required by Department of Economic Affairs in the Ministry of Finance, Government of India, Reserve Bank of India (RBI), business community, analysts, and several others to assess

Table 1: Structural Changes in the distribution of Total GVA during 1950-51 to 2014-15

Industry	**1950-51**	**1970-71**	**1980-81**	**1993-94**	**1999-2000**	**2006-07**	**2011-12**	**2014-15**
1. Primary	**58.2**	**47.3**	**41.3**	**33.5**	**27.3**	**20.5**	**21.6**	**19.3**
2. Secondary	**14.8**	**21.4**	**22.6**	**23.7**	**23**	**24.7**	**29.9**	**28.1**
3. Tertiary or service sector	**27**	**31.3**	**36.1**	**42.8**	**49.3**	**54.8**	**48.5**	**52.6**
3.1 trade, hotels & restaurant	**8.5**	**10.7**	**12**	**12.7**	**14.2**	**15.4**	**10.8**	**12.0**
3.1.1 Trade	8	10.1	11.3	11.9	13	13.9	9.7	10.9
3.1.2 Hotels & Restaurants	0.5	0.6	0.7	0.8	1.2	1.5	1.1	1.1
3.2 Transport, storage & comm.	**3.1**	**4.3**	**6.1**	**6.5**	**7.5**	**11.4**	**6.5**	**6.9**
3.2.1 Railways	1.2	1.4	1.5	1.2	1.2	1.2	0.7	0.8
3.2.2 Transport by other means	1.4	2.2	3.6	4	4.6	5.3	4.2	4.2
3.2.3 Storage	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
3.2.4 Communication	0.4	0.6	0.9	1.2	1.6	4.9	1.6	1.8
3.3 Financial, real estate and business services	**5.8**	**5.6**	**6.4**	**11.5**	**13.1**	**14.3**	**18.8**	**21.0**
3.3.1 Banking & insurance	1.1	1.7	2.3	5.3	5.9	6.7	5.9	6.1
3.3.2 Real estate, ownership of dwellings & business services	4.7	3.9	4.1	6.2	7.2	7.6	12.9	14.9
3.4 Community, social and personal services	**9.7**	**10.7**	**11.5**	**12**	**14.9**	**13.6**	**12.6**	**12.7**
3.4.1 Public Admin & Defence	2.5	4.1	5.2	5.6	6.9	5.6	6.0	5.8
3.4.2 Other services	7.2	6.6	6.3	6.4	8.1	8	6.5	6.9
4. Total GVA	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

(Note: figures for 1950-51 to 1993-94 are based on 1993-94 prices; for 1999-00 to 2006-07 on 1999-00 prices and for 2011-12 onwards on 2011-12 prices)

changing structures, and watch the growth. Financial Service sector statistics are also required by policy makers, and analysts by various regions for understanding the regional distribution in the economy. Generally annual and more frequent (Quarterly, QNA for Special Data Dissemination Standard of IMF to which India has subscribed) estimates are required on contribution of income and employment of the non-financial and financial service sector activities.

1.3. Measurement of macro-economic aggregates like output, gross value added (GVA), intermediate consumption (IC), final consumption expenditure (FCE) like household FCE (HFCE), FCE of non-profit institutions serving households (NPISH), private FCE (PFCE), government FCE (GFCE), gross fixed capital formation (GFCF), change in inventories (CII), Valuables, exports, imports, gross/ net national income (GNI/ NNI), gross national disposable income (GNDI), saving, etc. are made following the guidelines of the international Standard on System of National Accounts (SNA) which has been revised over time from 1953 SNA to 1968 SNA to 1993 SNA to the latest 2008 SNA (see *Annex*). In what follows, we propose to discuss the definitional and conceptual issues relating to the measurement of output of products, focusing on the financial services produced in the economy as per the latest international Standard, the 2008 SNA. Implementation of the recommendations of 2008 SNA on financial services in the Indian National Accounts would be discussed *inter-alia*.

2. Definitional and conceptual issues relating to the measurement of output of products

2.1. Production versus Output

2.1.1. Production is an activity carried out by an establishment. It may not always be clear whether an establishment is producing service A or is providing a service B. When the establishments belong to different enterprises (institutional units), the defining principle is that of economic ownership. If an establishment has no discretion about the level of production, the price to be charged for the service A, there is evidence that the establishment has not taken economic ownership of the service B being processed and the value of the output should be treated as the processing element only. When the establishments involved belong to the same enterprise, there is no change of ownership since both establishments have the same owner. However, the principle of transferring risk, which accompanies change of ownership, can still be applied.

2.1.2. Though in general, all products that are produced and used by the same establishment are excluded from the measure of output, but there are exceptions. For example, output is recorded if the products being produced is used for own capital formation of the establishment. Thus if an establishment develops a plant or an original research (R&D)/ software, data-base for its own use, it has to be added to its output of product provided to other units and then the capital formation created by the establishment need to be placed as acquisition of assets in the same establishment.

2.1.3. ***Output*** is thus defined as the products produced by an establishment, excluding the value of any products used in an activity for which the establishment does not assume the risk of using the products in production, and excluding the value of products consumed by the same establishment except for products used for capital formation or own final consumption.

2.2. Market and Non-market Output

2.2.1. ***Market output*** in a market economy is that where producers make decisions about what/ how much to produce. Economically significant price is the factor behind production decisions. Economically significant prices are prices that have a significant effect on the amounts that producers are willing to supply and on the amounts purchasers wish to buy. These prices normally result when the producer has an incentive to adjust supply either with the goal of making a profit in the long run or, at a minimum, covering capital and other costs; and consumers have the freedom to purchase or not purchase and make the choice on the basis of the prices charged. Output produced by market producers for own final use is to be valued at the average basic prices of the product sold on the market. If not, the output is to be valued by the total production costs incurred, including consumption of fixed capital (CFC) plus any taxes (less subsidies) on production, plus a net return on the fixed capital and natural resources used in production. The concept of the net return to capital is introduced for the first time in 2008 SNA.

2.2.2. ***Non-market output*** of services consists of individual or collective services produced by government units or Non-Profit Institutions serving Households (NPISHs) that are supplied free, or at prices that are not economically significant, to other institutional units or the community as a whole. For example: education, health services, IT services, issue of currency, monetary policy, supervision of banks free or at prices that are not economically significant. Although this output is shown as being acquired by government and/ or NPISHs in the use of income account, it should not be confused with production for own use. The expenditure is made by government and by NPISHs but the use of individual services is by households, and the use of collective services by households or other resident institutional units. Any receipts on sales by the government or NPISH are considered as negative entry in the final uses.

2.2.3. ***Value of the non-market output*** provided without charge to households is estimated as the sum of costs of production, as: Intermediate consumption + Compensation of employees + CFC + taxes (less subsidies) on production. No net return to capital is included for non-market production. Similarly, no net return to capital is included in the estimates of production for own final use by non-market producers when these are estimated as the sum of costs.

2.3. ***Own account gross fixed capital formation:*** Intellectual property products such as R&D and software may be produced on own account. Such GFCF needs to be estimated at cost.

2.4. ***Valuation of output for own final use:*** Output for own final use should be valued at the basic prices at which the products could be sold if offered for sale on the market. The nearest equivalent price is likely to be the so-called “farm-gate” price. When reliable market prices cannot be obtained, a second best option is to consider sum of their costs of production: For household or unincorporated enterprises, it may not be possible to estimate compensation of employees, CFC and a return to capital separately in which case an estimate of mixed income, covering all these items, could be made.

3. Output of Financial services

3.0. Output of financial services is mostly not defined as sales or receipts from the activity. For non-market activities component the output is obtained conceptually at cost. For financial intermediaries, like banks, the output is obtained as the sum of Financial Intermediary Services Indirectly Measured (FISIM) which is the major component plus direct charges receivable for the chargeable services provided. The 2008 SNA considers financial institutions as the financial corporations and classify them, as mentioned earlier, into following types: Central Bank; Deposit-taking corporations; Money Market Funds (MMF); Non-MMF investment funds; Other financial intermediaries; Financial auxiliaries; and Captive financial institutions, each one further categorized into public, national private and foreign controlled units; and Insurance corporations and Pension funds. For Financial activities other than the Central Bank (Reserve Bank of India in the Indian context) mentioned above, the classifications could be broadly grouped into three types: financial intermediation, financial auxiliaries and other financial services. The financial corporates or households (informal sector) such as money lenders that lend money to other units/ households from their own funds were not recognized in 1993 SNA but are now recognized in 2008 SNA by redefining the FISIM. It is very important to mention that beside corporate sector certain informal sector financial activities like money lenders, chit fund etc. do have significant presence in India and other developing countries in Asia and Africa. Their contribution to GVA/ output needs to be incorporated in the total GVA/ Output of financial sector.

3.1. *Output of the Central Bank*

3.1.1. Central Bank (the RBI in the Indian context) conceptually the bank of banks has several roles to play in the economy that includes issue of currency, monetary policy services, money supply, fixing currency reserve rates, supervision of banks and financial institutions maintaining financial discipline, ombudsman service, etc. in the economy, and intermediation through banking division. Issue of currency, monetary policy services, supervisory services, IT services, etc. are collective in nature, serving the community as a whole, and thus represent non-market output. The financial intermediation services are individual in nature and in the absence of policy intervention in the interest rates charged by the central banks, may be treated as market production. The borderline cases, such as supervisory services may be classified as non-market services and valued at cost. However total activities of the central bank is to be placed in the financial corporate sector.

3.1.2. The 2008 SNA has clarified that though the central bank is placed in the financial corporate sector, its non-market activities are to be estimated at cost. As mentioned earlier, as per 2008 SNA, the central bank is in the Corporate-financial sector and not in General Government. The collective consumption is recorded as expenditure by general government but government does not incur the costs incurred by the central bank. Therefore a current transfer of the value of the non-market output is recorded as payable by the central bank and receivable by the general government to cover the purchase of the non-market output of the central bank by government as a current transfer.

3.1.3. In the Indian National Accounts, until 2015 the earlier series considered activities of RBI as market only for banking division and non-market for rest of the activities. In the new series (base year 2011-12) of national accounts entire operations of RBI is taken as non-market and thus valued at cost resulting in lower value of output compared to what it was in earlier series. Table 2 below shows the output of RBI in the reference year 2011-12, as estimated at in the new series as non-market for entire activities (Rs. 9887 Crores) and in the earlier series (base 2004-05) as market for banking (Rs. 32280 Crores) and non-market for rest of the activities of RBI (Rs. 9975 Crores).

Table 2: Output of RBI estimated as Market + Non-market in earlier series (base year 2004-05) and only Non-market in the new series (Base year 2011-12)

S.N.	Department of RBI	Market + Non-market as in earlier series	Non-market as in new series
		Output *(in Rs. Crores)*	
1.	**Issue Department**	**3157**	**3157**
2.	**Banking Department**		**6730**
2.1	**FISIM on Loans**	**208**	
2.2	**Margin on Securities** (rate=difference between lending rate and reference rate taken as 1.01)	**5500**	
2.3	**Other market Output** (other earnings excluding capital gain)	**1021**	
2.4	**FISIM for RBI** (for base year 2011-12 as per methodology of earlier base 2004-05)	**32280**	
3	**RBI Output (non-market component)**	**9975**	**9887**

3.1.4. The change in the new series of Indian national accounts on treatment of RBI as non-market from the mixed approach adopted in all earlier series was mainly on two counts. One, the fact that the deposit of banks at the RBI is a part of its monetary policy function and RBI does not make any interest payment on these deposits. Two, the international practice, as now all European countries and almost all the Asian countries are treating their central bank as non-market. Besides though RBI can segregate issue and banking department data, all market and non-market operations of the RBI cannot be dis-aggregated. Thus, treating the RBI as a non-market entity was considered justified. However this topic remains open for research/ review.

3.2. *Financial intermediation*

3.2.1. Financial intermediation involves financial risk management and liquidity transformation, activities in which an institutional unit incurs financial liabilities for the purpose of acquiring mainly financial assets. Corporations engaged in these activities obtain funds, not only by taking deposits but also by issuing bills, bonds or other securities. They use these funds as well as own funds to acquire mainly financial assets not only by making advances or loans to others but also by purchasing bills, bonds or other securities.

3.2.2. Financial service provided by means of financial intermediation is a process whereby a financial institution (a bank) accepts deposits from units with ‘excess’ funds to other units in need of funds. Each of the two parties pays a fee to the bank for the service provided. The unit lending funds accepts a lower rate of interest than that paid by the borrower; the difference is equal to the combined fees implicitly charged by the bank to the depositor and to the borrower. It represents charges for financial intermediation services indirectly measured (FISIM). The bank thus provides a mechanism to allow the first unit to lend to the second. Each of the two parties pays a hidden fee to the bank for the service provided.

3.2.3. It may be mentioned that in 1993 SNA, lending exclusively from own funds was not considered an economic activity and the FISIM was conceptualized only as:

FISIM (on loans (f_L) and deposits (f_D)) =interest receivable (R_L) less interest payable(R_D)

i.e. $$f_L + f_D = R_L - R_D = r_L Y_L - r_D Y_D \qquad \text{.........} \quad \text{........} \quad \text{...... .....} \ \textbf{(A)}$$

Where, loans stock (Y_L) and deposits stock (Y_D) are multiplied by their interest rates (r_L and r_D).

3.2.4. However, it is seldom the case that the amount of funds lent by a financial institution exactly matches the amount deposited with them. Some money may have been deposited but not yet loaned; some loans may be financed by the bank’s own funds and not from borrowed funds. However, the depositor of funds receives the same amount of interest and service whether or not his funds are then lent by the bank to another customer, and the borrower pays the same rate of interest and receives the same service whether his funds are provided by intermediated funds or the bank’s own funds. For this reason, the 2008 SNA recommends, an indirect service charge to be imputed in respect of all loans and deposits offered by a financial institution irrespective of the source of the funds. The reference rate applies to both interest paid on loans and interest paid on deposits so that the amounts of interest recorded, as such are calculated as the reference rate times the level of loan and deposit in question. The difference between these amounts and the amounts actually paid to the financial institution are recorded as service charges paid by the borrower or depositor to the financial institution. For clarity the amounts based on the reference rate recorded in the SNA as interest are described as “SNA interest” and the total amounts actually paid to or by the financial institution are described as “bank interest”. The implicit service charge is thus the sum of the bank interest on loans less the SNA interest on the same loans plus the SNA interest on deposits less the bank interest on the same deposits. The service charge is payable by or to the unit in receipt of the loan or owning the deposit as appropriate.

3.2.5. Thus, the implicit service charge is equal to sum of the bank interest on loans *less* SNA interest on the same loans *plus* SNA interest on deposits *less* the bank interest on the same deposits. The indirect service charge is imputed in respect of all loans and deposits offered by a financial institution irrespective of the source of the funds. In other words, as per 2008 SNA, FISIM (on loans (f_L) and deposits (f_D) equals stock of loans multiplied by the difference between interest rate on loans (r_L) and a reference interest rate (rr) plus the stock of deposits multiplied by difference between a reference interest rate and the interest rate on deposits (r_D).

$$f_L + f_D = (r_L - rr)Y_L + (rr - r_D)Y_D$$
$$f_L + f_D = rr(Y_D - Y_L) + r_L Y_L - r_D Y_D \qquad \text{....... ....} \; \textbf{(B)}$$

It implies that FISIM derived from the above two formulas (**A** & **B**) are equal when the stock of loans (Y_L) is equal to the stock of deposits (Y_D). Further more importantly, when units are lending exclusively from own funds, FISIM is equivalent to $(r_L - rr)Y_L$.

3.2.6. It is important to note that the financial services that function with their own funds were not recognized in 1993 SNA but are now recognized in 2008 SNA by redefining the FISIM. Beside corporate sector certain informal sector financial activities that function with their own funds like money lenders, pawn shops, chit fund, etc. have significant presence in India and most developing countries in Asia and Africa, thus their contribution needs to be incorporated in the output of total financial services. In all the earlier series, the informal/ unorganized sector financial activities were incorporated in the output of financial services by taking it as one third of the contribution of Non-government Non-banking financial companies. Improved methodology for estimating unorganized activities is now adopted in Indian national accounts as explained below.

3.2.7. FISIM for moneylenders: Within the unorganized financial sector of Indian economy, the main financial intermediaries are the money lenders. The output, GVA, etc. of private moneylenders in the new series is obtained making use of the data of the All India Debt and Investment Survey (AIDIS), conducted by the NSSO in its 70th Round in 2012. Ratio of loans on agriculture and personal loans to households by all financial institutions to that of moneylenders as available from the AIDIS 2012-13 and data on outstanding credit of all commercial banks have been used to estimate quantum of loan advanced by money lenders. AIDIS 2012 provides the information on ratio between loan given to households (including cultivator households) by scheduled commercial banks and loan given to households (including cultivator households) by money lenders separately for rural and urban. Applying these ratios on outstanding credit of scheduled commercial banks for agriculture and personal loans separately for rural and urban as available from RBI Basic Statistical Returns, estimated outstanding loan given by money lenders are obtained. Report of the Technical Group to review legislations on money lending under the chairmanship of Sh. S.C. Gupta, RBI states that the average rate of interest charged by money lenders ranges from 18% to 36%. Thus midpoint of the range (27%) is taken as estimated interest rate charged by money lenders. Using all these, the ratio of outstanding loan from money lenders to that of the commercial banks is obtained. This was used to compute the estimated FISIM produced by money lenders in 2011-12. The intermediate consumption (IC) of them was obtained from the analysis of unit level data of the 67th round NSS survey of unorganized non-agricultural enterprises. IC came out as 9.518% of the interest receipts.

3.2.8 The reference rate to be used in the calculation of SNA interest is a rate between bank interest rates on deposits and loans. The rate prevailing for inter-bank borrowing and lending may be a choice as a reference rate. However, an appropriate reference rate is still a research area.

3.2.9. Advantages of the 2008 SNA, FISIM formula (**B**) are that the services provided to depositors and borrowers are independently estimated irrespective of what the deposits are used for and funds for providing loans come from; and it facilitates the distribution of indirect service charges to its users in a consistent way by allowing calculations at a detailed level.

3.2.10. The FISIM computation formula (**B**) however involves several compilation issues:

A single reference rate should be used, but (when relevant) a country can use multiple rates.

- Rate prevailing for inter-bank borrowing and lending may be a suitable as a reference rate.
- For banks within the same economy, there is often little if any service provided in association with banks' lending to and borrowing from other banks.
- A simple way to obtain a reference rate reflecting the maturity structure of financial assets/liabilities is to calculate the average of the sum of the ratios of interest payable and receivable to the stock of deposits and loans as follows:

$$rr = 0.5(R_D / Y_D + R_L / Y_L)$$

The reference rate to be used in the calculation of SNA interest is a rate between bank interest rates on deposits and loans. The rate prevailing for inter-bank borrowing and lending may be a choice as a reference rate. In the revised series (base 2011-12) of National Accounts Statistics reference rate is taken, at the instance of the author, as harmonic average instead of arithmetic average, as the two entities are ratios. However an appropriate reference rate is still a research area.

Measurement in Volume Terms

3.2.11. The measurement of the volume change in the output of financial intermediation should take into account the total output, including the direct charges. In the absence of direct deflators for the output of FISIM, one of the following approaches could be used:

- Rate of change of the volume indicator can be derived using the rate of change of average stocks of loans and deposits deflated by a general price index (e.g. the GDP deflator) adjusted for quality change in the output of financial services
- The output indicator method which involves breaking down the different characteristics linked to financial services (numbers and values of loans and deposits, savings, money transfers, etc.). For each characteristic, an appropriate volume indicator is derived, and volume indicators are then weighted together

3.3. Financial Auxiliaries and other Financial Services

3.3.1. ***Auxiliary financial activities*** facilitate risk management and liquidity transformation activities. Financial auxiliaries, who are the units primarily engaged in auxiliary financial activities, typically act on behalf of other units and do not put themselves at risk by incurring financial liabilities or by acquiring financial assets as part of an intermediation service.

3.3.2. ***Financial services associated with the acquisition and disposal of financial assets and liabilities in financial markets:*** Debt securities such as bills and bonds are other forms of financial assets that give rise to interest payments, interest being payable to the owner of the security by the issuer. Some of these interest charges may themselves be imputed from changes in the value of securities as they approach maturity. When a financial institution offers a security for sale, a service charge is levied, the purchase price (or ask price) representing the estimated market value of the security plus a margin. Another charge is levied when a security is sold, the price offered to the seller (the bid price) representing the market value less a margin.

3.3.3. Prices of securities may change rapidly and to avoid including holding gains and losses in the calculation of the service margins, it is important to calculate the margins (the output of the service) on sales and purchases in terms of mid-prices. The mid-price of a security is the average at a given point in time between the bid and ask price. Thus, the margin on the purchase of a security is the difference between the ask price and mid-price at the time of the purchase and the margin on a sale is the difference between the mid-price and the bid price at the time of the sale.

3.3.4. Equities and investment fund shares or units give rise to property income other than interest but, like debt securities, they are offered for sale and purchase at different prices. The difference between the buying price and mid-price and the mid-price and selling price should be treated as the provision of financial services (output) as in the case of securities.

3.3.5. A large direct fee is likely to be charged by credit card issuers to the units that accept credit cards as a means of payment. The charge is usually calculated as a percentage of the sale; in the case of retailers the sale value corresponds to turnover and not output. Although the percentage is usually small in absolute terms, it is applied to such large figure resulting in large total value of the charge. Charge represents output of the credit card companies and intermediate consumption of the corporations that accept credit cards as means of payment. Ignoring the role of the credit card company does not affect the measurement of the final consumption or exports on the goods and services concerned but does underestimate the costs of the provider of goods and services and the output of the credit card company. This in turn leads to a misallocation of value added from the credit card company to the provider of the goods and services paid for by credit card. Besides, a card holder may also be charged an explicit fee, usually each year, for holding the card. In addition, if a card holder uses the credit facilities offered by the card, he will pay indirect charges associated with interest payable on the outstanding credit.

3.4. Insurance

3.4.1. Insurance service may be for non-life or life. In non-life insurance, only the risk is covered. Thus when the event happens for which insurance has been made, claim is made.

For Non-life or term insurance the gross output (GO) is determined as

GO = premium payable + supplemental premium - claims

3.4.2. However in life insurance there is an element of saving besides risk coverage. Thus besides claims, the insurance company pays the insured amount after completion of period to the survived person from its actuarial reserve.

For Life insurance, the gross output is determined as
GO =premium payable + supplemental premium - claims - change in actuarial reserve

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Annexure

National Accounts and Macro-economic Aggregates in 2008 SNA

In SNA, measure of production is Gross Value Added (GVA) defined as GVA = GVO – IC, where GVO stands for Gross Value of Output and IC for intermediate consumption. Gross Domestic Product (GDP) is the sum of GVAs of enterprises in the economy and taxes less subsidies on products. GVA and GVO are at basic prices whereas IC is at purchaser's price. Main identities in SNA, each providing an account are:

Commodity balance: Gross value of output of goods and services at market prices (mp)

$$GVO_{mp} \equiv IC + PFCE + GFCE + GFCF + CII + \text{Acquisition less disposal of valuables} + X - M \quad \dots \dots \dots \quad [1]$$

Where, PFCE: private final consumption expenditure (household final consumption expenditure (HFCE) and FCE of Non-Profit Institutions serving Households (NPISHs); GFCE: Government final consumption expenditure, GFCF: gross fixed capital formation, CII: change in inventories, X: exports, M: imports.

Production-side identity:

$$GDP_{mp} \equiv GVO_{bp} - IC + \text{product (t-s)} + \text{(t-s) on imports} \quad \dots \dots \dots \dots \quad [2]$$

Where product (t-s) denotes taxes on products less subsidies on products; and (t-s) on imports denotes taxes on imports less subsidies on imports.

Income-side identities:

$$GDP_{mp} \equiv (CE + OS + MI) \text{ generated in domestic enterprises} + \text{Product (t-s)} + \text{(t-s) on imports} \quad \dots \dots \dots \dots \quad [3]$$

Where CE denotes compensation of employees, OS denotes operating surplus, and MI denotes mixed income, the mix of CE and OS due to self-employed/ own account enterprises.

$$GNI \equiv (CE + OS \,\&\, MI) \text{ generated in domestic enterprises} + \text{Product (t-s)} + \text{(t-s) on imports} + \text{CE from RoW (net)} + \text{PI from RoW (net)} \quad \dots \dots \dots \dots \quad [4]$$

$$GNDI \equiv GNI + \text{(net) current transfers} + \text{(Net) taxes on income and wealth from RoW} \quad \dots \dots \dots \dots \quad [5]$$

Expenditure-side identities:

$$GDP_{mp} \equiv PFCE + GFCE + GFCF + CII + \text{Acquisition less disposal of valuables} + X - M \quad \dots \dots \dots \dots \quad [6]$$

$$\text{Gross Savings} \equiv GNDI - (PFCE + GFCE) \quad \dots \dots \dots \dots \quad [7]$$

Implies, Net lending from RoW ≡

$$\text{Gross Savings} + \text{(net) Capital transfer receivable} - (GDCF + \text{acquisition less disposal of valuables}) - \text{Acquisition less disposal of non-produced non-financial assets} \quad \dots \dots .. \quad [8]$$

SNA framework reflects the economic processes through sequence of accounts that provides an overview of a given economy. Sequence of Accounts is structured by institutional sectors (including ROW) in three sub-sets: Current accounts, Accumulation accounts and Balance sheet accounts. Institutional sectors comprise Corporate Financial, Corp. Non-financial, General Government, NPISH, and Household sector.

Current accounts include: Production account, identity [2]; Income accounts comprising Generation of income account , identity [3]; Allocation of primary income account, identity [4]; Secondary distribution of income account, identity [5]; Use of income account, identity [7].

Accumulation accounts record all changes in assets and changes in liabilities in the Capital and Financial account, identity [8]. Besides, in 2008 SNA, Other changes in assets account includes 'Other changes in volume of assets account' and 'Revaluation account'. Balance sheets record stocks of assets and liabilities and the difference.

Each account has a balancing item that is significant as a macro-economic aggregate like gross / net domestic product (GDP / NDP), gross / net national income (GNI/ NNI), gross / net disposable income (GNDI/NNDI), gross / net saving; and in the capital/ financial account as net lending/borrowing.