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**Integration of Income Statements and Balance Sheets:
Implications for Improving Financial Sector Measurement**

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Integration of Income Statements and Balance Sheets: Implications for Improving Financial Sector Measurement

There has been extensive and rewarding research on the approach to measuring prices of financial services.¹ The purpose of this paper is to advance that work by showing how price measurement concepts can be clarified, and measurement facilitated through the integration of balance sheets with income statements. The primary reason balance sheet availability is useful is that intertemporal gains and losses -- e.g., from holding financial instruments or an unforeseeable, yet insured disaster -- can more correctly be assigned to both income statements and balance sheets. Once nominal output is defined, the characteristics of many financial services can be more clearly defined for purposes of price index construction.

The major reasons for integrating income statements and balance sheets have been widely discussed. They range from the desirability of including financial working capital in production and consumption function estimation to the recognition that assets and liabilities can be ascribed only to enterprises, not establishments, the primary unit of observation in measuring output. This paper is intended to emphasize another reason -- one relating to economic measurement.

The first significant research that was predicated on the joint use of income statements and balance sheets is that of Ruggles.² He showed how moving insurance losses through the balance sheets of insurance providers would clarify the concepts and facilitate the measurement of the price indexes needed to estimate the real output of insurance companies. His work was

¹ Issues resolved and unresolved are discussed in Paul Schreyer's "Measuring the Production of Financial Corporations," OECD Task Force on Financial Services in the National Accounts, October 2002.

² "The United States National Income Accounts, 1947-1977: Their Conceptual Basis and Evolution," Richard Ruggles in *The U.S. National Income And Product Accounts: Selected Topics*, Murray F. Foss, Editor, NBER, vol. 47, Chicago University Press, Chicago, 1983.

implemented in Popkin who found that balance sheet availability made a significant difference in the specification, and therefore the behavior, of prices of various kinds of insurance products, vis-a-vis the real measures in official statistics.³ The result of not recognizing these intertemporal changes through balance sheets has been mismeasurement of output and productivity.

The integration of balance sheets does not obviate the need to make decisions about illusive issues surrounding the treatment of risk/uncertainty, and holding gains or losses. In both insurance and mutual funds, holding gains are an important part of the services provided. Gains on investments of insurance carriers allow them to meet obligations when unforeseen risk (uncertainty) occurs. Mutual funds and certain types of life insurance policies are purchased to create savings. The more the total return on such funds, the better is the service they provide. But consideration of income statement and balance sheet interactions sheds light on the impact of such outcomes on output measurement and on whether the outcome meets other criteria for measuring real GDP.

Financial services, including real estate, are the most obvious sectors in which measurement could benefit from integration. That is because such services primarily involve asset transfer activities as opposed to the transfer of goods and services. There are four major categories of such services. A general discussion of the impact of integration on various income and balance sheet categories, given certain assumptions, follows:

1. Property and casualty insurance

Assume, for example, that output of such insurance products is defined as premiums paid plus investment income including holding gains themselves, and that claims are initially balance sheet items. For a home fire, the value of the tangible property is written down and the insurance claim payment is recorded as an increase to cash balances. The T accounts affected would be 1) production

³ "The Impact of Measurement and Analytical Issues in Assessing Industry Productivity and its Relationship to Computer Investment," Study for IBM, Joel Popkin and Company, October 1992.

account; 2) generation of income account; 3) allocation of income account; 4) accumulation account for non-financial and for financial capital; 5) other changes in value account to record catastrophic losses; 6) a revaluation account to record holding gains and losses; and 7) finally, the balance sheet itself.

2. Life insurance

Again, define output and consumption as premiums plus total investment income.⁴ Claims would lower insurance companies' reserves and increase the cash balance of the personal sector. Claims payments would be part of the accumulation account and the personal balance sheet, increasing the net worth of the recipient. Accumulated cash values attributable to household savings activities would be part of the personal balance sheet, just as are other savings.

3. Financial intermediation services indirectly measured (FISIM)

Holding gains pervade the banking sectors and their treatment in integrated accounts is straightforward. But an additional consideration arises because of the treatment of FISIM currently being widely adopted. FISIM is increasingly being allocated to borrowers and to deposit holders by statistical agencies. The allocation is based on a reference rate, which is usually derived by averaging interest rates over several periods. That is done to reduce volatility. As a result, the calculated amount of FISIM paid is different than if current rates were used. These differences are holding gains and losses and as such, should be shown in an accumulation account, perhaps as financial adjustments similar to those of IVA for physical inventories. The integrated accounts and balance sheets needed to accomplish this are those for financial, nonfinancial, personal, and total sectors. Treatment of FISIM for savings and loan institutions and credit unions would be similar.

⁴ Conceptually, to the extent that the premium reflects a combination of savings and a payment for insurance services, only the payment for insurance services should be perceived as the consumption component. In reality, this may be a somewhat difficult division to make.

4. Real estate and financial services other than insurance and banking

Transactions in these sectors, because they involve the transfer of assets and liabilities, generate sizable holding gains and losses. Sometimes they get included in output, rather than in a revaluation account. Or they are ignored, so their impact on savings, especially by persons, is not accounted for.

This paper, using three specific industries, explores in more detail the impact of the use of integrated income statements and balance sheets on the measurement of nominal output and on the structure of the price indexes used to deflate it. They are:

1. Property and Casualty Insurance (SIC 6331/NAICS 524126)
2. Life Insurance (SIC 6311/NAICS 524113)
3. Investment Advice (SIC 6282/NAICS 52392/3)

In some instances, availability of balance sheets permits more relevant specification of price indexes and better define and improve quality adjustments. In other cases, the need to incorporate asset prices in indexes used to deflate flows becomes unnecessary. A relevant example of the kind of problem such treatment causes is the former measurement of housing prices in many CPIs by making homeownership costs a function of house prices and mortgage interest rates.

In order to isolate, to the greatest extent possible, the pure impact of integration of the two accounts, other necessary assumptions will be made in this paper, such as that insurance companies, not consumers, bear the risk of the occurrence of policy liabilities. That assumption continues to be debated, although that assumption has been implemented in national and international practice. For each of the three cases, the impacts will be analyzed qualitatively -- i.e., the direction of the impact on nominal GDP in the current time period and over time and the major affects on price measurement concepts and quality

adjustment. In order to facilitate analysis, the three studies are drawn from industries for which the U.S. publishes producer price indexes.⁵

Property and Casualty Insurance

This analysis assumes insurance carriers bear the risk so it is appropriate to use gross premiums as the basis for insurance output.⁶ Thus, in the following examples investment income of insurance companies is added to the premium receipts to measure nominal output. The insured pay premiums for risk protection in advance of making any claims. These premiums are invested by insurance companies, and the resulting earnings are used both to build reserves, so that the companies can pay claims even if they exceed anticipations, and to keep premiums lower than they otherwise would be. Total investment returns are regarded as the imputed charge for intermediation services by the insurance company, i.e. its output. Both the SNA and the PPI include investment income in output and prices. In the PPI, a ratio of investment income as a percent of premiums is applied to the premium and added to the value of the premium, these ratios are available from *Bests Aggregates and Averages*.⁷ Claims will be treated as balance sheet items as recommended by Richard Ruggles.⁸

The following example provides estimates of GDP and national income when households and business each buy \$110 worth of insurance (\$100 premium and \$10 of investment income.) Assumed claims of \$20 are paid to households. Table one describes the estimation the national income and gross domestic product for this example, using gross premiums. Table two offers estimates of income and product for this example using premiums less claims.

⁵ However, it should be noted that the concept that is appropriate for an industry output PPI may not be the same concept that is appropriate for the deflation of National Accounts components.

⁶ In the National Income and Product Accounts (NIPAs) of the U.S., insurance output is defined as premiums less payments on claims which implies a concept of shared risk among policyholders with the insurance company administering the plans for the policyholders.

⁷ This same ratio is used to estimate investment income in the BEA measure, only a weighted average is used.

⁸ Ruggles (1983), pp. 67-68.

With gross premiums, gross domestic product and income are higher than under the net premium concept, premiums minus claims. If premiums and claims grow in similar manner over time, there would be little difference in growth rates. Mark Sherwood suggests using gross premiums as the measure of consumption purchases but treating claims payments as intermediate purchases made by the insurance companies from other industries to replace the lost goods. With this treatment, GDP remains the same as if the net premium method was used.⁹

Table 1: Impact on National Income and Product Accounts using Gross Premiums (suggested methodology)			
Resources		Uses	
Compensation	No change	Personal consumption expenditures	110
Profits	90	Premiums	110
Insurance	200		
Other	-110		
Net interest (insurance company investment income)	20		
National Income	110	GDP	110
Table 2: Impact on National Income and Product Accounts using Net Premiums (current BEA methodology)			
Resources		Uses	
Compensation	No change	Personal consumption expenditures	90
Profits	70	Premiums	110
Insurance	180	Less claims	20
Premiums	200		
Less claims	20		
Other	-110		
Net interest (insurance company investment income)	20		
National Income	90	GDP	90

However, it is more straightforward to deflate premiums, where prices and specifications exist, than to deflate both premiums and benefits. The latter are

⁹ Mark Sherwood, "Output of the Property and Casualty Insurance Industry," CSLS Conference on Service Sector Productivity and the Productivity Paradox, Ottawa Canada, April 1997, p. 15. Jack Triplett suggests a similar treatment in Barry Bosworth and Jack Triplett, *Services Productivity in the United States: New Sources of Economic Growth*, forthcoming.

difficult to deflate because money received from the claims does not necessarily have to be used to replace the same items lost or destroyed nor does any replacement that does take place have to occur in the same period as the loss. Thus, insurance sector value added becomes more difficult to express in constant dollars.

Premiums and claims do not move similarly, especially when there are disasters. When disasters result in large insurance claims, subtracting the value of these claims from premiums and premium supplements can have a significant effect on net premiums. Premiums are set to reflect risk exposure that can be predicted, usually on the basis of past experience; however, the uniqueness of disasters makes them unpredictable (or uncertain). Under these circumstances, net premiums are often negative. Since by current convention, disasters affect current but not constant dollar output, they often result in questionable implicit price index movements. This is particularly true if net premiums are extrapolated using deflated premiums because of the difficulty of finding a net premium deflator or an appropriate one for claims. If separate price indexes are used for premiums and for claims, the real net premiums will be affected by the disaster.

Furthermore, if a portion of the claims are paid by foreign insurance carriers, then premiums less claims reduce imports and the balance of payments improves. These insurance payments are not current production and are better handled as balance sheet transactions. To smooth out the impact of disasters on the balance of payments, the IMF recommends using expected rather than actual claims. However, because expected claims data are not usually collectible, they are often estimated from actual claims over several periods. Even when the impact of the disaster is spread over several periods, it will still affect net premiums and prices to a lesser extent, but the impact will affect several periods instead of just the actual period that the disaster occurred.

BEA uses exponential smoothing of claims over several periods.¹⁰ This is akin to assuming that average past claims experience measures risk, and that subsequent disasters affect risk measures with a lag i.e., that the uncertainty of disasters is nonetheless measurable *ex post*. BEA attempts to minimize the impact of such a loss; the loss ratio in the year of a disaster is treated as a missing observation in calculating the exponential average, and the difference between the actual and expected loss is smoothed in over 20 years and added in to the future loss ratio.¹¹ In other words, the cost of the World Trade Center bombing will be included until 2021. Use of a 20-year period smoothes out the disaster so there is only a small impact in any given year. However, the 20-year period seems unreasonably long because insurance carriers try to recover from these losses as soon as possible, even raising premium rates in the next period.

If balance sheets are integrated with accounts, as laid out in Appendix 1, insurance transactions can be more clearly laid out without many of the anomalies just described. Premiums are included in GDP for the household sector and output of the insurance company. These premiums will be inputs for business, and only premiums will be part of the balance of payments. Claims payments will appear as part of the Other Changes in Value of Assets (OCVA). They will enter the balance sheets as declines in insurance reserves and increases in the cash and deposit balances of the policyholders receiving claims. Any purchases made with these payments will enter in the goods and services accounts through normal channels and therefore can be correctly deflated.

When balance sheet accounts are available, only insurance premiums need to be deflated on the payment side. Deflation is simplified by using a premium price index such as the one developed by the BLS for the PPI program. This price index is based on an actual transaction and BLS calculates

¹⁰ Brent R. Moulton and Eugene P. Seskin, "Preview of the 2003 Comprehensive Revision of the National Income and Product Accounts," *Survey of Current Business*, Volume 83 no. 6, (June 2003), p. 19.

¹¹ Baoline Chen and Dennis J. Fixler, "Measuring the Services of Property-Casualty Insurance in the NIPAs," *Survey of Current Business*, Volume 83 no. 10, (October 2003), pp. 13-15.

it in two different ways, with investment income and excluding it. There is some quality adjustment as premium prices are adjusted for experience ratings. In the examples presented, we have included investment income following the SNA. Should the investment income include capital gains, a “total return” approach? Moulton and Fixler think these gains should be included if they are an integral input into the services provided, and these gains are included in the NIPA estimates.¹² Following this reasoning capital gains on insurance investment income are not excluded from the balance sheets presented.

A question does remain as to whether investment income, with or without capital gains, reflects price or quantity. In the SNA and one of the two PPIs, it is reflected in prices. Thus prices go up when investments increase and go down when these decline. Increasing income on investments adds to reserve positions to meet contingencies and allows for lower premium rates so that investment income should affect output rather than prices (Bosworth and Triplett, 2004).

Life Insurance

The purchase of property and casualty insurance is clearly the purchase of insurance services. The purchase of life insurance is also the purchase of insurance services; but it also has added nuances that complicate its treatment in the national accounts framework. The purchase of straight term-life insurance policies is the same as any other casualty insurance purchase; a protection against the risks of lost income.¹³ However, this is not the only type of service provided by life insurance companies. Many life insurance products have a savings generating component (cash value). Different types of life insurance products have varying amounts of cash value in addition to the risk coverage.

¹² Dennis Fixler and Brent R. Moulton, “Comments on the Treatment of Holding Gains and Losses in the National Accounts,” OECD Meeting of National Accounts Experts, Paris 2001, pp. 6-7.

¹³ There is a complication because a relatively large percentage of the premiums are being paid by employers rather than the consumer purchasing it directly. Considerable term insurance is provided as a fringe benefit so the tax implications complicate the calculation of the premium and raises the question of who pays for the fringe benefit.

Consequently, not all of the premium can be considered a premium for the straight insurance part of the calculation, and thus a purchase of services PCE. Some of the premium is savings by the household, and that portion should not be treated in the same manner.¹⁴

Nominal Measures of Life Insurance in the National Accounts

As was mentioned earlier, the concept currently used for life insurance in the National Accounts is one of risk pooling. The implicit assumption is that the insurance companies charge consumers a fee equal to operating expenses to act as their representatives in the risk pooling process. Those are the expenses of private businesses that underwrite life insurance and administer pension plans and profits of stock corporations. On the income side of the accounts, the money with which to purchase life insurance premiums may be coming from wages or other income if the consumer is making the insurance purchase or it may show up as other labor income if businesses are buying the insurance on behalf of their employees.¹⁵ Consequently, life insurance is consolidated in two ways under the current U.S. NIPA treatment, all purchases are consolidated into consumer final demand and the savings of life insurance carriers are consolidated into the household sector.¹⁶

The savings of persons from accrued investment income earned on these life insurance policies is not included in PCE, but is included in personal income and savings through the FISIM of life insurance carriers and pension plans. This

¹⁴ Households are likely to be purchasing this type of insurance directly. Businesses usually purchase straight life insurance as an employee benefit.

¹⁵ While in reality businesses are generally purchasing group life insurance policies, in the national accounts this is shown as the business providing the fringe benefit/other labor income equal to the amount of the premium to the employee (which shows up on the income side of the accounts). On the product side of the accounts, the expenses represent all life insurance company expenses, not just those that cover the transactions for insurance directly purchased by consumers. If the purchase of life insurance by businesses were not consolidated into final demand in this way, it would be treated as a business expense or an intermediate input in the accounts.

¹⁶ See Robert Parker's "Treatment of Insurance in U.S. National Accounts," a presentation to the Brookings's Workshop on Measuring the Price and Output of Insurance, April 1998.

is the difference between their property income and the expense of handling life insurance. FISIM implies a timing or accrual adjustment so that personal savings include the property income that has been withheld from the policyholder as it is earned.

If the concept of insurance output were changed to one of gross premiums, then the product side of the accounts would show premiums paid plus premium supplements, still consolidated into the final demand sector, as PCE purchases. Ideally, this would only be the portion of the premium associated with the assumption by the insurance carriers of the loss risk.¹⁷ Since benefits would not be netted out of the transaction, there would have to be an additional “income” side increase equal to reserves held against expected payouts by the insurance companies. In the T accounts presented in Table 1 this is equivalent to an increase in insurance company profits.

As was mentioned earlier, there are two schools of thought as to whether the use of gross premiums should increase the value of GDP. Ruggles thought that it should increase the value of GDP because the gross premium reflected the value of the protection against loss that the consumer is purchasing. Triplett and Sherwood have argued that the use of gross premiums for property and casualty insurance would not increase GDP. The difference lies with how the purchases made with the benefits are treated. If those purchases are treated as purchases of the insurance company, they are intermediate products rather than final demand purchases and do not result in an increase in GDP. However, this is a particularly difficult concept to apply to life insurance. While one can make the assumption that a large percentage of the benefits paid out for auto or homeowner’s insurance are used to pay for repairs or replacement to the item that is insured, one can not make the same assumption for life insurance. There is no way of determining if benefits from life insurance are used to make

¹⁷ Implicit in the change to a gross premiums measure of PCE is a change in the concept from the insurance company acting as the consumer's agent in a risk pooling process to a concept of insurance companies assuming the risk associated with the policy.

purchases in the current period, and even if that assumption could be made there would be no way of determining what is being purchased. Consequently, there would not be a good way of determining what portion of personal consumption purchases should be reclassified as the intermediate purchases of the life insurance companies.

The consolidation of savings that currently takes place in the household sector might be better divided with a set of fully incorporated balance sheets. The output of the life insurance industry would be the premiums paid by consumers and businesses, for the portion of insurance services that reflects the assumption of the loss risk. In addition, these insurance companies are providing some intermediation services related to the “savings” portions of these policies. Benefits payments would be entered positively on the consumers’ balance sheet and as a payout on the insurance companies’ balance sheets but would not be part of income. The payoff from a life insurance policy could be shown as an estate transfer. On the balance sheet both the “insurance” and “savings” portions of the insurance transaction would appear. The savings accruing from a life insurance product is an asset of the consumer and should appear with other line items showing the allocation of such savings. However, the allocation of the savings between the insurance company and the consumer might be different. Currently, all those savings have been consolidated into the household sector. This makes the assumption that policyholders are implicitly receiving those savings even though they are not paid directly to them in the current time period. An alternative is to determine if the holding and payment of these savings should be shown as transfers between the insurance companies’ balance sheets and the consumers’ balance sheets.

Estimating Real Output

While there are alternative views on whether the use of gross premiums should increase the level of nominal GDP, it is clear that it would change the

concept used for deflation and the measure of real output. Instead of deflating the nominal PCE component representing the administrative costs associated with life insurance with a cost-based measure of price change, the prices of premiums would be used, adjusted for quality changes.

Currently, BEA constructs constant dollar estimates of life insurance by deflating the expenses of life insurance (the PCE component) with a BEA-created composite deflator of input prices. The index includes data on average earnings of life insurance carriers, weighted together with price indexes that show the change in the price of other inputs. Those include rents, maintenance and repair services, telephone communications and postal services, fuel, and various other commodities and services. Nearly 90 percent of the weight reflects average earnings of life insurance employees and fulltime equivalent earnings of insurance agents. This price index does a relatively better job of matching the underlying concept, that the purchase is one of management services, than does the current methodology for the deflation of property and casualty insurance in the accounts. However, if the concept for life insurance purchases in PCE is changed to one of gross premiums the purchase is no longer for management services. Consequently, the weighted input index is no longer the appropriate concept for use in deflating the series.

A change to using gross premiums as the PCE component would require the use of the price of premiums risk adjusted as the deflator.¹⁸ The BLS now constructs such a price index for insurance company output as part of its expansion of the Producer Price program to better cover services. However, the most aggregate industry index covers all the products the industry offers, as it should for use in the PPI program. However, that aggregate index would not necessarily be appropriate to use it for deflating an “insurance only” concept in the National Accounts. The differing movements in the specific sub-components

¹⁸ In earlier work estimates of such changes were made by using premiums per \$1,000 adjusted for age and mortality shifts and corrected for the average size of the policy in force. See Joel Popkin and Company (1992), A6-A9.

of the insurance PPI, indicates why consideration of this point is important. The indexes that reflect the price changes for term life and group life insurance (probably closest to the concept for the gross premiums concept being discussed here) showed an annual rate of change of 0.9 percent and -0.5 percent respectively during the 1999 through 2003 period. At the same time other life insurance industry products such as annuities and whole life insurance have increased more quickly with average annual increases of 3.0 percent and 1.4 percent respectively over the same time period. These differences may partially reflect the different methods BLS uses for determining the prices for different policies as well. For the basic types of life insurance, BLS prices the premium. However, for annuities and some specialty types of life insurance products with variable premium levels, BLS prices certain expense items related to the provision of the services.¹⁹ Those price changes can be compared with the deflator currently used to produce real life insurance PCE from the nominal administrative costs of insurance. The average annual increase in the deflator has been 4.6 percent over the 1999-2003 time period.²⁰

In addition to the premium price, BLS incorporates the change in the insurance companies' investments in the price index. While it is clear that this is important income to the insurance company and it does impact the level of premiums that a consumer is paying, it is not clear that its treatment as a price change is necessarily appropriate for use as a deflator for a gross premiums concept in the National Income accounts. Premium supplements are being added to the actual premium payment being made by the consumer in estimating the increase in PCE. The rationale for that was discussed in the property and

¹⁹ Those generally include items like the cost of insurance (cost of paying death benefits), mortality and expense charges (amount associated with the company's risk), administrative expense charges, etc. See Arlene Dohm and Deanna Eggleston's "Producer Price Indexes for Property/Casualty and Life Insurance," April 1998.

²⁰ One should not use this difference in growth rates to determine the change in GDP that might be forthcoming from this change in concept. The growth rate of nominal gross premiums may also have deviated from the growth rate of the nominal administrative expenses.

casualty section. However, with the mixture of products presented in life insurance, the allocation of investment income between the savings and insurance portions of life insurance could again be problematic.

One reason that National Income accountants have seemed reluctant to move toward a gross premiums concept is the difficulties in determining what the appropriate risk adjustment should be for insurance premiums. BLS has not resolved all of the issues related to quality adjustment of insurance premiums but does hold the basic characteristics of the policies constant when pricing them. Those characteristics would be the age of the person, the length of time the contract has been in force, whether the person engages in higher-risk activities, such as smoking, etc. BLS also increases the face value of the insurance on an annual basis. This is done to maintain a constant replacement value for the consumption the policy is used as protection for. While quality adjustment for changes in risk does raise difficult issues, it is not a good reason to shy away from the use of a gross premiums measure. The quality adjustment problem is there regardless of whether “net” or “gross premiums is used; gross premiums provides a more straightforward concept with which to determine the appropriate risk adjustments to be made. As Triplett and Bosworth (2004) point out:

Pricing gross premiums implies collecting a price for a direct transaction that can be observed. Changes in risk associated with the policy are quality changes, creating quality change problems that are comparable to other, well-known quality change difficulties in price indexes. Trying to avoid the quality change by using a net premiums approach substitutes an imputation for direct pricing, because it implies constructing a price index for a transaction that is not normally observed, and it carries with it quality change problems that are probably as severe, relative to the size of the “price” that is measured.

Imputations are sometimes necessary in economic statistics. But it seems undesirable to impute when a transaction is available to be observed, no matter what quality change difficulties may arise in making comparisons between two observed transactions.

Investment Advisory Services

Another example of the benefit that can be derived from balance sheet integration is found in investment advisory services, in particular mutual fund advisory services. Aside from the fundamental problems that are frequent in pricing services, the difficulties are complicated because advisory fees are usually a percentage of the value of the assets under management. Fluctuation in asset prices raise or lower the revenue paid to fund managers. The question is, of course, whether such fluctuations reflect changes in real output. The premise, consistent with the SNA, is that pure holding gains are not output.

The recently developed BLS price index for mutual fund stock management is an example. Mutual fund advisory fees are typically set as a percentage of the net asset value of the funds under management. Thus, the fee goes up or down based on a number of factors. The primary ones are movements in the prices of the underlying securities, inflow (purchases) and outflow (redemption) of fund shares income received from interest and dividends and the dividends payable to fund shareholders. The last three sources of fee change can be handled in a largely straightforward way. The first -- holding gains -- are more difficult to treat.

Holding gains and losses are not typically regarded as pay for a financial product or service, i.e., they are not a direct input to the service in the Fixler-Moulton sense. Further they come and go and would contribute wide swings to price or output measures if they crept into nominal output. The only way to keep them out of nominal output is to put them some place or to ignore them in measuring and quantities. The SNA provides the balance sheets necessary to account for them, unquestionably the best approach.

The relatively new BLS price index for mutual fund advice factors out holding gains and losses.²¹ But, it accomplishes this by making an asset price

²¹ Holdway, Michael. "Fitness of Use Criteria for Price Index Deflators in National Income Accounting," Brookings Workshop on Productivity in the Service Sector, November 1, 2002.

index into the price index it publishes for the services of fund managers. This is then used to deflate nominal fees. BLS' methodology begins by measuring the relative of price change associated with the fee rates (usually expressed in the basis points) that the fund adviser charges. That fee, times the net value of funds under management represents the compensation to the manager. If the net value of the fund goes up because of net inflows, managers are assumed to be handling a larger number of shares to make investment decisions about. But if the portfolio is revalued due to market fluctuations, the amount must be factored out of price or quantity measures. The BLS does this by multiplying the basis point relative by the relative of change in assets prices. In rising markets, the price index will rise thereby deflating out the rise in fee income that is driven by holding gains.²²

Wouldn't it be more straightforward to subtract those holding gains from fund values and reflect them in balance sheets? That way the price index would not rise and fall with the change in asset prices, which can fluctuate considerably over the short run. Accounting would be more thorough and exact.

Furthermore, such treatment would address another issue regarding the quality adjustment of such services. The point has been made that the quality of such services should depend on the performance of the various managed investments vis-à-vis some benchmark (Goldberg, 2002). Again, balance sheets would serve to simplify the issue in a sensible way. By factoring asset price change out of the price index, managers are deemed paid a fee for the number of shares they manage. How well they do is reflected in the balance sheets of investors. Performance is rewarded by the size of accounts and changes in them among managers.

²² The BLS does not factor out changes in real estate prices in its price indexes for Real Estate Agents and Brokers. Thus, that index is inconsistent with its index for mutual fund fees.

Appendix I- Accounts with Integrated Balance Sheets

Production Account			
	Uses		Resources
	Intermediate Consumption	GDP	Output
Total	110	90	200
Household		110	
Government			
Nonfinancial	110		
Financial			220
Foreign		-20	-20

Generation of Income Account				
	Uses			Resources
	Compensation	Insurance Property Income	Profits	Domestic Product
Total		20	70	90
Household		10		110
Government				
Nonfinancial		10	-110	
Financial			200	
Foreign			-20	-20

Allocation of Primary Income						
	Uses					Resources
	National Income					GDP
	Total	Compensation	Insurance Property Income	Profits	Addenda: Insurance Reserves	
Total	90		20	70		90
Household	10		10			110
Government						
Nonfinancial	-100		10	-110		
Financial	200			200	200	
Foreign	-20			-20	-20	-20

Allocation of Secondary Income			
	Uses		Resources
	Taxes	Disposable Income	National Income
Total		90	90
Household		10	10
Government			
Nonfinancial		-100	-100
Financial		200	200
Foreign		-20	-20

Uses of Income			
	Uses		Resources
	Final Consumption	Saving	Disposable Income
Total	110	-100	10
Household	110	-100	10
Government			
Nonfinancial			
Financial			
Foreign			

Capital Account		
	Uses	Resources
	Gross Capital Formation	Saving
Total		-100
Household		-100
Government		
Nonfinancial		
Financial		
Foreign		

Financial Account			
	Change in Assets		Change in Liabilities
	Net Acquisition of Financial Assets	Insurance Reserves	Net Occurrence of Financial Assets
Total	200	200	200
Household			
Government			
Nonfinancial			
Financial	220	220	220
Foreign	-20	-20	-20

Other Changes in the Value of Assets							
	Change in Assets					Change in Liabilities	
	Fixed Assets	Losses to Property	Financial Assets	Cash Receipt for Insurance Loss	Insurance Reserves to Pay Claims	Liabilities	Addenda: Claims on Insurance Reserves
Total	-100	-100	0	100	-100	100	100
Household	-25	-25	25	25			
Government							
Nonfinancial	-75	-75	75	75			
Financial			-90		-90		90
Foreign			-10		-10		10

Holding Gains				
	Change in Assets			Change in Liabilities
	Nonfinancial Assets	Financial Assets	Addenda: Cash and Deposits	Claims on Insurance Reserves
Total	3	24.0	0	24.0
Household	1		0	0
Government	0		0	0
Nonfinancial	1.5		0	0
Financial	.5	28.4	0	28.4
Foreign		-4.4	0	-4.4

Real Holding Gains				
	Change in Assets			Change in Liabilities
	Nonfinancial Assets	Financial Assets	Addenda: Cash and Deposits	Claims on Insurance Reserves
Total	-12.0	6.0	0	6.0
Household	-2.0		0	0
Government			0	0
Nonfinancial	-7.5		0	0
Financial	-2.5	7.1	0	7.1
Foreign		-1.1	0	-1.1

Neutral Holding Gains				
	Change in Assets			Change in Liabilities
	Nonfinancial Assets	Financial Assets	Addenda: Cash and Deposits	Claims on Insurance Reserves
Total	15.0	18.0	0	18.0
Household	3.0		0	0
Government			0	0
Nonfinancial	9.0		0	0
Financial	3.0	21.3	0	21.3
Foreign		-3.3	0	-3.3

Opening Balance Sheet							
	Assets				Liabilities and Net Worth		
	Nonfinancial Assets	Financial Assets	Addenda: Cash and Deposits	Addenda: Insurance Reserves	Liabilities	Addenda: Claims on Insurance Reserves	Net Worth
Total	500	900	400	500	500	500	900
Household	100	100	100				200
Government							
Nonfinancial	300	300	300				600
Financial	100	600		600	600	600	100
Foreign		-100		-100	-100	-100	

Closing Balance Sheet							
	Assets				Liabilities and Net Worth		
	Nonfinancial Assets	Financial Assets	Addenda: Cash and Deposits	Addenda: Insurance Reserves	Liabilities	Addenda: Claims on Insurance Reserves	Net Worth
Total	403.0	944.0	300.0	644.0	644.0	644.0	703.0
Household	76.0	25.0	25.0				101.0
Government							
Nonfinancial	226.5	275.0	275.0				501.5
Financial	100.5	758.4		758.4	758.4	758.4	100.5
Foreign		-114.4		-114.4	-114.4	-114.4	

Notes:

Holding gains are the sum of the neutral holding gains (change in the value of the asset keeps pace with the rate of overall inflation) and real holding gains (change in the value of the asset relative to other assets).

Foreign represents transfer of premium income by domestic carriers to foreign carriers for re-insurance.

Closing Balance Sheet Values are:

Nonfinancial Assets-

Opening Balance + Investment + Change in Other Value of Assets [Loss of Property] + Holding Gains

Financial Assets-

Sum of:

Cash-

Opening Balance + Savings (personal savings and profits) + Change in Other Value of Assets [Cash Receipts for Insurance Losses]

Insurance Reserves-

Opening Balance + Change in Other Value of Assets + Holding Gains

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