

Session 6D: Income and Wealth: Theory and Practice II
Time: Thursday, August 9, 2012 PM

*Paper Prepared for the 32nd General Conference of
The International Association for Research in Income and Wealth*

Boston, USA, August 5-11, 2012

**Valuation of Assets and Holding Gains in National Accounts:
Is Further Progress Needed?**

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32th IARIW general conference - 9 August 2012 – Boston USA
Plenary Session 5: Income and Wealth: Theory and Practice

Valuation of assets and holding gains in national accounts: are further progress needed?¹

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Abstract

After presenting the rules and methods stated in SNA for asset valuation, this paper discusses the questions and criticism that non national accountants usually address to national accounts regarding revaluation and holding gains and losses. The purpose is to assess if the changes brought into the SNA 2008 are enough or if there is still something to do. The questions examined and answers are listed below:

Question 1: Is the revaluation at market value suitable while institutional unit may have no intention to sell shortly and while prices may be subject to bubbles?

Answer: Mark to market revaluation is used only for negotiable assets. Like in business accounts that are used as a source for the national accounts, market value is an objective source. For this reason, it is more suitable than models, which are used when nothing else is available but which rely on unobservable parameters that depend on expert judgment. The choice of a discount rate for example may be debatable with considerable impacts on amounts. Furthermore, the models based on fundamentals are now replaced in financial theory by models based on the strategies of market participants that do not permit aggregated calculations.

Question 2: According to financial theory and more and more to business accounts, there is no difference between holding gains and property income that both participate to the return on assets. In fact, the former corresponds to a frontloading of the later, when compared to the “normal” rate of return at the date of valuation. Why national accounts do alone maintain the difference?

Answer: This results from the debtor view that was preferred to the creditor view in order to comply with the quadruple entry accounting of the national account. The debtor pays the scheduled interest and does not permanently reassess the amount and cost of debt. However, turning to more complex products (with profit insurance ...) it becomes more difficult to split scheduled property income from holding gains. Business accounts gave up in some cases and do not provide the split anymore, which make it difficult for national account to do so. The creditor view made his path prudently in SNA 2008 with complementary data on impaired loans. However, the split between property income and change in value may be available for swaps in private accounts, while financial accounts gave up to maintain it!

¹ A preliminary version of this paper was presented at the symposium of the Association of National Accounts in Paris- June 2010.

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³ The opinions expressed in this article are those of the author and do not necessarily reflect those of the Supervisory prudential authority or Banque de France.

Question 3: Holding gains provide resources for consumption in case of households, for payment of bonuses, taxes and dividends in case of financial institutions. Should they not be recorded in revenue?

Answer: SNA 2008 treats as production of financial institutions the holding gains that correspond to negotiation margins. For other sectors and assets other than shares, holding gains result in a revaluation of the own funds of the holding sector if unrealized (of its net asset if a household) and as a net lending when realized, the later financing the uses of fund listed above. In case of shares, the mechanism is a bit more complex, as the revaluation of shares reflects the growth in the prospects of their issuer. It thus may be argued that revaluation of share does not reflect an increase in price but an increase in quantity of capital, and that it should give rise to an investment flow in financial account. The mechanism of reinvested earnings in foreign direct investment is based on this kind of analysis. In our view, it should be extended to all shares, whoever the investor is.

To conclude, valuation of assets and treatment of holding gains in SNA 2008 seems appropriate according to the aims assigned to national accounts: measuring economic flows objectively, providing a coherent description of these flows between sectors and operations. Some progress in coherence may still be made by extending the reinvested earning in foreign direct investment to any shares whoever is the investor. The treatment of swaps may also be enhanced by splitting interest accrued and paid through the period and changes in value.

As stated in the 1993 SNA (System of National Accounts), the 2008 SNA recommends that assets and liabilities be measured at transaction value. For negotiable assets, this means market value on the date of valuation.

The revised SNA did not change this rule, but difficult questions regarding its implementation were discussed. For instance, the case of seldom negotiated assets, such as unquoted shares, was clarified. As a general rule, they may be measured by reference to the price of comparable assets, but other methods are also proposed, the discounted value of future income flows coming last, because it cannot dispense with strong assumptions regarding the choice of the discount rate and the estimated future income. Non-negotiable instruments such as deposits and loans however are still recorded at nominal value, but it was proposed to add memo items on downgraded loans and their discounted value.

On these various points, national accounts cannot avoid the debate with private-sector accounts, from which they draw their data for the most part. They also have to justify the fact that their interpretation of the economic and financial situation can differ from that of the accounts published by businesses. In this respect, national accounts can only benefit from the convergence of the positions.

One significant difference between the two analytical frameworks is the way in which holding gains and losses are accounted for: they are recognized in profit and loss in private-sector accounts (without exception when realized and sometimes when unrealized), whereas in national accounts they do not contribute to the income of agents⁴. Inspired by finance theory, international private-sector accounts have in many cases abandoned the distinction between income generated by regular remuneration of an asset from that arising from capital gains and losses. National accounts attempt to maintain this distinction and for this reason they are led to adopt certain strong conventions. Conversely, they do not rule out the restating of certain changes in value in the current accounts, whether in production for the negotiation margins acquired by financial institutions (excluding insurance) in their market-making activities or in property income for earnings reinvested in cross-border groups.

It may however be advantageous to go further and incorporate more broadly holding gains and losses into an alternative definition of income. For instance, its current definition can be questioned, as holding gains made by households are used for spending. In like manner, while unrealized gains are not included when calculating the profitability of businesses, their profitability is reduced when their net worth is increasing in value, which may seem paradoxical. Accumulation accounts provide series of gains and losses over the period, realized and unrealized altogether, which the analyst can use to work out an alternative definition of income. However, they do not isolate realized holding gains and losses that may be useful to calculate an overall *a posteriori* profitability of investments.

After examination of the valuation methods recommended by the SNA and of the theoretical distinction between change in value and property income, this paper states that:

- The recording of realized holding gains and losses, instead of total (realized and unrealized) gains and losses, is not compatible with the revaluation of balance sheets at market value which is the rule in SNA and the idea should be abandoned
- The treatment of realized holding gains as financing in financial accounts instead of revenue in current account is adequate for non financial assets and most financial assets, excluding shares
- The revaluation of shares due to accumulated profit should be treated as reinvested earnings not for foreign investors only but for all investors, as the increase in value implies in that case an increase in “quantity” and thus require an investment flow
- The recording of swaps may be enhanced. Instead of recording only changes in revaluation account with a counterpart in financial accounts, national accounts may separate interest accrued and paid in the current period and record them as interest in the current account, letting change in

⁴ They are recorded in accumulation accounts, thereby ensuring the link between the current account and the balance sheet.

values solely for the chronicle of future flows. This may require a separate accounting or netting of such interests.

The figures in brackets refer to 2008 SNA articles.

1. Asset valuation according to the 2008 SNA: the principles of the 1993 SNA have been clarified

Like the 1993 SNA, the 2008 SNA recommends valuing transactions at the price at which they are made, that is, mostly at market price (3.121)⁵ on their date of realization. Assets are booked in the accounts at this price, and are revalued at each cut-off date as if they had been acquired at this latter date (3.155).

1.1. The valuation method of capitalized assets depends on their negotiability

By way of exception, financial assets that are not traded on organized markets are recognized at nominal value, that is, the amount the debtor must pay to the creditor (13.16).

Thus, the value of a deposit or loan varies over time according to repayments already made and accumulated accrued interest but it is not discounted (3.157b). It cannot therefore vary along with market interest rates.

This pragmatic distinction between fixed-value non-negotiable assets and revalued negotiable assets seems totally pertinent. It does indeed seem logical to track the market price of an asset that can be sold at any time, whereas it does not seem justified to do so for an asset held to maturity. Implementing this however is problematic.

Firstly, assets that are non-negotiable to begin with can be sold before maturity, for instance as part of "true sale" securitization transactions. For a credit institution, such a transaction consists in selling its loans to an entity that funds them to redemption by issuing securities. Loans that are traded only once are not reclassified (as securities) however (13.64)⁶. Equally, the profits and risks of technical insurance provisions can be sold to non-insurer investors. The amounts involved in such transactions are still much smaller than loan transactions (under 1% of global securitization transactions).

Furthermore, loans can undergo losses in value when the probability of their being repaid falls below one. This is more particularly the case when a debtor in difficulty suspends repayments, maybe temporarily, without being declared bankrupt yet. The creditor then has to reduce the value of the receivable in its accounts and recognize a provision without nonetheless granting the debtor a remission of debt. The asymmetry between the value of the debtor's liability (unchanged) and that of the creditor's asset (reduced) is incompatible with the quadruple entry accounting principle underpinning national accounts and with adoption of the debtor's point of view. According to this point of view, it is indeed the nominal value of the loan that is recorded in the accounts. In addition, the 2008 SNA recommends memorandum items recording the discounted present value of non-performing loans (13.67).

Conversely, certain investors acquire marketable securities with the intention of holding them to

⁵ Transaction prices for goods and services are inclusive of taxes and subsidies (3.121), whereas those of financial assets are recorded exclusive of taxes and commissions (3.122). Since the financial asset is recorded at the same time as an asset of one agent and a liability of another, this must be done for the same value. This limitation does not apply to goods or non-financial assets.

⁶ Securitization is involved in 60% of American household loans but in less than 5% of French household loans.

maturity. That is particularly the case for insurance corporations and pension funds. If their assets are revalued according to changing interest rates whereas liabilities are not, the balance sheets show artificial fluctuations in net value [Trainar, 2008].

Insurance technical provisions that are not unit-linked and the defined benefit commitments of pension funds are recognized at the present value of all future claims (13.76 to 13.78). If they are not held for sale, they should not be discounted again when the market rate changes. In fact, the SNA does not specify whether the discounting rate should be adjusted over time or therefore whether the value of insurance technical provisions and pension fund reserves should be adjusted.

With regard to the valuation of assets, the international standards of private-sector accounts are never totally similar to the principles underpinning the national accounts. The IFRS 9⁷, designed to replace IAS 39, in principle provides for measurement at market price, but with exceptions, that differ from national accounts one. For example, “plain vanilla” debt securities that are held to collect the contractual cash flows rather than to sell the instrument prior to its contractual maturity in order to realize its fair value changes, are recorded at amortized costs. This rule may not apply however if it creates a measurement or recognition inconsistency, that would be reduced with market value.

National accounts and private accounts partly share the same criterion to decide between market value and amortized costs, namely the probability for the asset to be sold in the short term or not. However, the national accounts are bounded by a full harmonization constraint, between debtors and creditors and through jurisdictions. Thus, they link the choice of the valuation method to broad types of assets. In their view, bonds are marketable and have to be recorded at market value. The private sector accounts are able to take into account the intention of the holder, either through its business model or the use of financial strategies involving several types of assets. With this more precise view on the probability of the asset being sold in the short term, it can’t meet the needs of national accounts.

The 2008 SNA recognizes that national accounts should take heed of developments in corporate accounting. This provides the basic information statisticians need, and changes in it reflect a modification in descriptive needs as regards economic activity, and product innovations in particular (A4.9). However, along with the changes observed in accounting regulations, we see that the needs of corporate accounting sometimes differ from those of national accountants. In any event, there is still a significant difference between national accounts and private-sector accounts, which revolves around the treatment of asset revaluations.

1.2. The 2008 SNA specifies what methods to use when market prices are unavailable

When market prices for transactions are not observable, other valuation approaches are suggested, in order of priority. Firstly, one should refer to market prices on similar items, possibly adjusted to make allowance for differences in quality (3.123). If no such reference market is available, goods and services can be measured by the amount that it would cost to produce them currently, plus a mark-up reflecting the income attributable to the producer (3.135). Valuation at cost is used in particular to estimate the value of goods and services produced by general governments, which have neither a market price nor often any equivalent on active markets. Valuation at acquisition price or production cost less write-downs for obsolescence applies both to investment flows and existing assets (3.136). Lastly, if no other information is available, assets are measured at the discounted present value of expected future returns (3.137).

⁷ IFRS 9 “financial instruments”, published in November 2009, contains regulation for financial assets. Requirements for financial liabilities were added in October 2010. Exposure drafts on impairment and hedge accounting respectively published in January 2011 and December 2010 are still under deliberation.

Discounting the value of expected future returns is also presented by the 2008 SNA as a way of checking the results of the methods most commonly used to value non-financial assets. Chapter 20 sets out the capital services model, and invites the reader to compare its results with those of the so-called perpetual inventory method (20.69-20.71), which is used virtually universally by national accountants and refers to the acquisition price adjusted by transactions, amortisation and a price index. This comparison can broadly be exposed as follows:

Let F be capital services
 $r_{t,i}$ = yield to maturity at valuation date t for maturity i
 V = value of capital
 p_t = price index for capital goods
 d = rate of asset depreciation through obsolescence
 I = investment
 T = maturity of the investment

The capital services model assumes (1):

$$V_t = \sum_{i=t+1}^T \frac{F_i}{(1 + r_{t,i})^{i-t}}$$

The perpetual inventory method can be written (2):

$$V_t = V_{t-1}(1 + p_t - d) + I_t$$

The two methods are connected by the capital in use formula (3), which assumes that the capital produces income covering its depreciation through obsolescence and changes in its market price, and generates a "normal" return. In the model's rationale, this "normal" return is also the discount rate:

$$F_t = (r_{t,T} - p_t + d)V_{t-1}$$

If we compare capital services F to gross disposable income and capital depreciation dV_{t-1} to consumption of fixed capital, and furthermore if we disregard changes in the price of the capital with a view to holding it until destruction, the return on capital is the net disposable income and the discount rate is an internal rate of return. However, one can also fix the discount rate according to the yield of alternative investments and in this way determine in a normative manner the return that the capital in question should yield.

In both the perpetual inventory method and the capital services method, it is difficult to estimate the downgrading rate and the price index of the existing capital. The downgrading rate may refer to fiscal standards applied by businesses but in that case it ignores the scrapping premium obtained when selling off investments that have been fiscally written off but are still usable. The price of new equipment, when it is more efficient than existing equipment due to technical progress, in fact includes an increase in the quantity of services provided. This explains why the prices of electronic data processing equipment have fallen in recent times.

The capital services method moreover relies on two additional assumptions, both of which presuppose a broad margin of appreciation. First of all, the discount rate. The discount rate reflects the time value of money. It therefore depends on the date of maturity of the flow to be discounted and on the inflation if nominal. The best way of eliminating items that are not dependent on a date of maturity or the relative value of money, and risk in particular, is to use the same rate of return for the denominator as for the numerator. Thus we revalue OAT using the OAT market rate, we calculate the present value of an investment using the company's internal rate of return, and we revalue the overall debt of a country using the estimated rate of growth of its GDP. In other words, the discount rate includes the same remuneration of risk as the income to be discounted. This technique however reaches its limits regarding the availability of an observable yield curve for all maturity dates. There are very few assets that are exchanged at all the maturity dates, even the longest ones on sufficiently liquid markets. So

we mostly use the yield curve of government bonds⁸, or the yield curve of swaps⁹, or the rate of quality "corporate" bonds¹⁰. These base rates are then adjusted by an appropriate risk premium¹¹. This correction includes a certain amount of convention. Yet small changes in the discount rate often have a considerable impact on the value of assets.

But the main margin of appreciation in applying the capital services method is still an estimate of future flows, which are radically uncertain. The SNA suggests estimating these returns using the difference between the acquisition cost of the capital and its end-of-life value, and the appropriate discount, downgrading and depreciation rates. While the method's arithmetical rigour is indisputable, its weakness again lies in using a normative discount rate as its basis.

More often than not future flows are estimated on the basis of past flows. In which case, this amounts to ignoring potential breakthroughs in "the state of the world": innovations, exceptional economic crises, changes in behaviour [Orléan, 2010]. The recent crisis provides a good example of changes in estimates that were previously the most plausible. Economic agents that held listed securities on unquestionably quality debtors saw their price plunging because they were sold off en masse by cash-hungry investors, even though the debtors' repayment capacity had not changed [Orléan, 2009]. This does not call into question recognition at market price, but simply makes us realize that it can be reviewed at any time and that there is a limit to how far one can go in using estimates to draw up a financial position that is supposed to reflect the present. It is one thing for market participants to prepare estimates in order to agree on a purchase or selling price. But it is quite another that accountants and statisticians draw inspiration from the simplest of these models to work out their own estimates. In the former case, the calculations are validated by at least two counterparties who are assumed to have conflicting interests in a transaction and they are penalized by a budgetary constraint. In the latter case, despite the high expertise involved in the estimate, the sanction is less immediate.

These difficulties arise when valuing unquoted shares, for which no market price is available and for which future income flows are particularly uncertain. The 2008 SNA (13.22 and 13.71d) recommends referring to transactions in similar goods, and this is encouraged in the European framework. So the ratio of the value of quoted shares to the equity of businesses in the same business segment is used. A writedown is included to make allowance for the greater liquidity of listed shares [Nivat, Topiol, 2010]. This however is hard to observe, and therefore a measure of convention is involved in estimating it. Users often wonder about the valuation of unlisted shares in French financial accounts, yet without noticing that the net worth of businesses is always positive and that there is thus a margin to further raise the price of the shares, unless one considers that it is non-financial assets that are overvalued. However, land and buildings, which make up over three quarters of them, are measured using a method recommended by the SNA and publicly available indexes.

Forecast future profits can also be discounted (13.71c). Besides the impossibility of observing the discount rate and future flows, which leads them to be fixed partly by convention, there is the additional problem of the flawed model, which has been largely surpassed by advances in market finance [Challe, 2008]. While such models based on fundamentals or intrinsic value are now challenged by models based on the observed behaviours on markets, should national accountants rely on them for their valuations? In fact, such models are not in a situation to provide guidance for valuations on aggregated bases, and there is no real choice for national accounts.

As a reminder, the formula (1) should be modified as follows in order to apply to equities (4) [This

⁸ Task Force CMFB on the statistical measurement of the assets and liabilities of pension schemes in general government 2006-2008, IPSAS, assessing insurance assets in French accounting standards and according to Solvency I.

⁹ Assessment of insurance assets and liabilities within the framework of Solvency II

¹⁰ IAS 19 on the corporate liabilities of businesses.

¹¹ Also Solvency II.

Saint Jean, 2008]:

$$S_t = \sum_{i=t+1}^{n-1} \frac{E_t(D_i)}{(1+r_{t,i})^{i-t}} + \frac{E_t(S_n)}{(1+r_{t,n})^n}$$

where $E_t(D_i)$ is the expected future dividends and $E_t(S_n)$ the expected share price in n . This equation can be resolved recursively towards the future, S_n should be equal to the intrinsic value P_n (5):

$$P_t = \sum_{i=t+1}^{\infty} \frac{E_t(D_i)}{(1+r_{t,i})^{i-t}}$$

And yet, it would appear that it does not really help to forecast market values. Market operators whose idea of the share price [Tadjeddine, 2008] differs, whether it is conventional (based for instance on chartists analysis) or consists in guessing how other players will behave, have an impact on the forecast transfer prices (second member of the equation (4)), breaking any link it has with the intrinsic value. A rational bubble phenomenon can then occur. The net value of a company as assessed by a private-sector accountant or financial analyst does not always carry the necessary weight to counter such hectic changes in price. Thus, if the model does not work for quoted equities, can we assume that it does for unquoted?

International private accounts themselves acknowledge the difficulty of valuing unquoted equities. IFRS 9 states: "In limited circumstances, cost may be an appropriate estimate of fair value. That may be the case if insufficient more recent information is available to determine fair value, or if there is a wide range of possible fair value and cost represents the best estimate of fair value within that range".

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Finally, the choice of market price as a reference for negotiable assets is sounder for a national accountant and the greatest difficulties arise when this market price is not available and has to be estimated using models. The models based on fundamentals used by national accounts are challenged by models that should predict prices more accurately but they can't be used on aggregated data. Furthermore, models based on fundamentals include factors that are not observable, the assessment of which does not always exclude normative determination, which should however be proscribed. The fact that the prudent SNA suggests several competing models only partially overcomes this difficulty.

2. The treatment of holding gains or losses: an unresolved issue

National accounts excludes recognition of holding gains or losses in profit and loss, be they unrealized or realized. If, as in private-sector accounts, shareholders' equity is defined in national accounts as the algebraic sum of the net worth and issued shares (own funds, 13.88), one can consider that national accounts charges unrealized and realized holding gains directly to own funds without passing through the income statement.

2.1. A continuing difference with private-sector accounts

Gains and losses recorded in the revaluation account correspond to the increase or decrease in the price of assets since the last closing, the assets being recorded at acquisition cost then revalued at market price at each closing.

Realized holding gains and losses appear on assets sold during the accounting period. When sold, they are entered with a reverse sign in the amount of net transactions.

Unrealized holding gains and losses affect assets still capitalized on the closing date. In practice, they affect own funds in a variety of ways:

- If the asset belongs to a quoted company, and if the market acknowledges this revaluation, it may entail that of the company's equity. The same goes for an unquoted company, whose issued shares are measured by statisticians on the basis of the net asset value.
- If the asset belongs to an unquoted company whose share price is based on own funds at book value, or to households or general government, the revalued assets are automatically charged to the net worth that balances assets and liabilities.

It is impossible to distinguish unrealized gains and losses from realized gains in the annual revaluation account. It is impossible in net transactions to separate the portion corresponding to the realized gains because it is the total amount of the sold asset that appears in these transactions.

For each asset, account consistency is achieved as follows:

$$E_t = E_{t-1} + F^+ - F^- + V$$

Where : E_t and E_{t+1} = amount outstanding at the end and start of the period

F^+ and F^- = acquisition and sale of assets during the period. F^+ includes realized gains and losses

V = net revaluation during the period. V includes unrealized and realized gains and losses during the period.

According to French accounting standards applying to non-financial businesses, realized gains and losses are recognized in profit and loss, as are unrealized losses. The latter give rise to provisions being recognized according to the prudent person principle by concomitant reduction of the value of the assets on balance sheet. Unrealized gains are not entered in the accounts. They are however for banks when they concern financial assets intended to be sold rapidly. These realized gains (and unrealized gains for banks) can give rise to bonuses being awarded to staff, and are taken into account for tax calculation purposes, as they are for calculating net profit that may be distributed to shareholders or retained.

The IFRS 9 provides for the recognition in profit and loss of unrealized gains and losses on assets measured at market price, to the exclusion of shares held, for which the entity has opted to record these unrealized differences in own funds. This option is only possible for shares held for non-trading purposes and it is irrevocable. It does not concern dividends received which are recognized through profit and loss. Unrealized gains and losses on loans and borrowings recorded at amortized cost are recognized in profit and loss when the instrument is derecognized, by the amortization process or when the debtor's solvency is called into question.

Previous analyses of the results of non-financial businesses already differed on account of realized gains and losses and depreciation provisions, depending on whether one was referring to national accounts or to French standards applying to private-sector accounting [Bataille, Durant, 2005]. The difference is even more striking for banks, which recognize unrealized gains and losses in profit and loss [Fournier, Marionnet, 2009]. The new international accounting standards (IASs) applicable in the European Union widen the gap even more by introducing unrealized gains and losses for all listed groups, even non-banking groups.

2.1. The equivalence between property income and holding gains or losses

According to the 2008 SNA (3.5), an asset is a store of value representing a source of future income streams. It is a means of carrying forward value from one accounting period to another. The debtor is

the party that has to pay the future income.

The relation between future value and present value relies on discounting (6):

$$V_t = \sum_{i=t+1}^T \frac{F_i}{(1+r_{t,i})^{i-t}}$$

where V_t is the value of the asset at t , F_i the income streams to be received on different future dates i , $r_{t,i}$ the discount rate on the date of valuation t at maturity i , T the date of the last payment.

We see that the value of an asset depends without distinction on future income streams corresponding firstly to repayment of the principal, either on maturity or through sales on a secondary market, with or without a change in value, and secondly to the flows corresponding to the receipt of certain periodic income (fixed interest) or uncertain income (dividends). In other words, the value of a financial asset varies without distinction with periodic future income (revised estimates of future dividends) and

estimated gains and losses (change in the estimated transfer price due to changes in the market interest rate compared with the coupon rate, losses further to deterioration of the debtor's repayment capacity). Market and investor practices are based on this consistency.

A seller of bonds on the secondary market, who due to a drop in interest rates since acquisition makes a gain, acquires in advance the portion of his entitled interest exceeding the day rate up to the instrument's maturity. He benefits from "front-loading" of interest. As for the buyer, who acquires this bond at a higher price than those issued today, he acquires the right to receive more interest in future than the amount accruing to him had he bought an instrument issued today. If the buyer holds the instrument to maturity, its rate of return will be that of the market on the day of purchase and the higher interest will be offset by a lower repayment in principal than the acquisition price.

The reasoning is more complex for shares. Changes in share prices include at least three components that are hard to dissociate: income to be distributed in the future, but also income to be retained in reserves and a component relating to the high volatility of the equity market. These last two components are specific to shares. Income retained in reserves can be analysed as a "quantity" change of property rights held, not just a change in price. Indeed, the company's net assets well and truly increase, so the share represents a greater property right. This component could then be treated like a purchase of new shares. That is indeed what happens for the reinvested earnings of foreign subsidiaries (see below). The volatility, while sometimes difficult to explain, is no less the validation thereof by a transaction at a given time of forecast greater future payments, either in the form of dividends or in that of capital gains in case of resale on the secondary market.

Neither financial theory nor international private-sector accounting, make any further distinction between periodic income and capital losses or gains. For instance, regarding instruments measured at amortized cost, IFRS provides for recognition at acquisition price¹². Then, the sum of future payments in the form of interest and capital is calculated in parallel. The difference with the acquisition cost, spread over the instrument's residual lifetime, determines the actual discount rate. In this calculation, no distinction is made between capital losses and gains on the one hand and interest income on the other.

While financial analysts and accountants do not distinguish gains and losses from property income, national accounts makes a special effort to draw this distinction. It justifies this effort by its preference for the "debtor" approach over the "creditor" approach. The former bases the interest calculation on the rate prevailing on initiation of the instrument, whereas the latter is based on the current market rate

¹² IASB "Financial instruments: amortised costs and impairment" Exposure draft ED/2009/12 November 2009.

(17.261). In the former, interest stated on initiation continues to be paid out throughout the instrument's life. Any change in the market price changes the value of the instrument, which is cancelled out over its lifetime if it is a fixed-rate security. In the latter, a change in the market rate "modifies" the interest received by the creditor, and results in an immediate gain or loss that precisely offsets this modification (17.262 and 17.263). The creditor permanently restates its portfolio owing to opportunity gains or costs. The "debtor" and creditor" approaches thus designated are underpinned by the premise that the debtor does not renegotiate his debt before maturity, whereas the creditor can arbitrate at any time according to new market conditions. Above all, the debtor approach makes a distinction between interest paid out and gains or losses (which it eliminates), whereas the creditor approach merges them in the same notion of rate of return.

The effort of national accounts to maintain this distinction imposes the establishment of conventions. One example is the recording of index-linked securities, for which the interest equals the initial rate applied to the nominal while the revaluation of the nominal is counted as capital gains (17.274-17.281). When only the interest is index-linked, rate changes only result in a change in interest payouts, as is the case for floating rate instruments.

Conversely, the national accounts give up with this effort when recording swaps, which only give rise to entries in financial accounts and are not deemed to pay out any property income in current account (17.293) while both types of recording coexist in private accounting.

More precisely, a "plain vanilla" interest rate swaps consist in swapping the yield (for instance a fixed rate against a floating rate) on an amount of capital called the notional amount over a given period. Swaps may be used to hedge a portfolio of loans or debt securities against rate fluctuations, or even as part of global hedging, to cover the interest rate mismatch between assets and liabilities. They are also used in speculative strategies. In any event, the income and losses they produce are recognized in profit and loss in two ways. Interests accrued in the current period are recorded, when paid or received as such in profit and loss. Changes in the value of swaps, which are no more than an adjustment when floating rates change of the present value of the estimated interest-rate spread for future periods, create holding gains or losses. They are recorded in profit and loss account or in comprehensive income, depending on the purpose of the swap.

Thus, private accounting allows for types of both entries in profit and loss: interest received and paid relate to the current period, changes in values relate to the whole chronicle of unpaid discounted future flows. On the contrary, national accounts only use one type of entry. They first opted for recording interest flows in property income then opted to record changes in values and consecutive transactions in the financial account. No flows now appear in property income and interest paid out (received) is analysed in the financial accounts as a revaluation (devaluation) of the swap and a concomitant sale (acquisition) of derivative. Over the lifetime of the swap, whose values at inception and maturity are zero, the sum of the transactions is thus the opposite of changes in value.

It is odd that the national accounts have given up to maintain the distinction between revenues and change in value where it prevails in private accounts.

2.2. There are several exceptions to the confinement of holding gains and losses in the revaluation account

These exceptions are undergone, accepted or intentional. They are undergone and remain purely at implementation level when private-sector accounts do not provide sufficiently detailed information to distinguish holding gains and losses from property income.

One example of insufficient available information is found in the treatment of property income distributed to policyholders, as well in non-unit linked policies as in unit-linked policies. In the former, the benefit is a minimum amount guaranteed under the original policy, possibly including a supplement at the discretion of the insurer. In France, this income distributed to policyholders includes interest, lease instalments, dividends and realized gains, because in insurance accounting the charges

to provisions related to profit-sharing that feed them makes no distinction between property income and realized holding gains. As for life insurance unit-linked policies, the benefits are based on a specified number of assets, whatever their value at the time of payment. The benefits paid out thus include losses or gains accruing over the lifetime of the investment and realized when the contract matures. This example is localized, but it illustrates the disregard shown by private-sector accounting towards the distinction between property income and holding gains or losses, and thus illustrates the impossibility for the statistician to have distinct data.

These exceptions are also deliberately accepted in various cases: when the salaries paid by banks include bonuses awarded to market operators, when the benefits paid out by pension funds include long-term gains, when the tax base includes capital gains and when the dividends distribute profits that themselves include capital gains. These capital gains may be unrealized or realised, as the case may be. The case of taxes on capital gains is covered by the 2008 SNA (8.61c). The discussions prior to its drafting explicitly exposed and accepted the paradox. On the other hand, Eurostat requires that dividends paid to the State by the central banks exclude capital gains from foreign exchange and on gold.

In theory, the consistency of accounts is not in question: the aforesaid expenses, which are funded neither by production nor by redistribution, generate a net borrowing covered by sales of revalued assets when capital gains are realized and by leads and lags included in other account receivable when capital gains are not realized.

However, the description of the economic reality proposed by national accounts may present deficiencies: it is difficult for instance to imagine that financial institutions relying on capital gains made on the financial markets do not at least in part owe these gains to a service they render to their clientele.

On this basis, the 1993 SNA had introduced trading margins on foreign exchange transactions in the production of financial institutions [Wright, 2000]. The 2008 SNA extends this restatement, by including in the production of financial institutions – to the exclusion of insurance companies and pension funds – the activity consisting in acting as counterparty for client claims on any financial instruments market (6.170-6.174). In either case, the financial institutions are considered to produce a liquidity service, requested and paid for by non-financial agents. At any given moment, a market maker offers a purchase and a selling price for a given financial product, the latter being higher than the former. When he buys, national accounts will now assume that he invoices his customer for a service the value of which is the average of the purchase and selling price less the purchase price. When he sells, the service equals the selling price less this average price. Changes in value thus restated are always positive by design, which is mandatory as regards production. As it is already the case for financial intermediation services indirectly measured, which revolve around conventional intermediation activities, this liquidity service will be purchased by the clientele that trades on the market, either for intermediate or for final consumption.

The treatment of earnings reinvested in foreign subsidiaries (7.136 – 7.138) traces changes in value relating to the retention of profits in own funds (or the reduction in own funds) as a change in the "quantity" of shares held and as property income. As such, the return on cross-border direct investments does not vary according to the distribution policy of the subsidiaries.

This treatment originated in balance of payments and was imported into the national accounts to harmonize the rest-of-the-world account with the balance of payments. It treats the reinvested earnings of foreign subsidiaries in the form of property income, the parent company immediately reinvesting this fictitious flow by subscribing for shares in its subsidiary. The counterpart of the property income received in the current account is thus recorded as an investment in financial accounts. The reinvested earnings may correspond to a gain or a loss. They can thus be positive or negative. When the subsidiary and the parent company are resident in the same country, charging the profits to own funds, according to the method used, increases the net value of the subsidiary or the value of its shares, via

the revaluation account. In total, the amount of shares posted as a liability in the subsidiary's balance sheet is increased, either through investment flows if cross-border or through revaluation if resident. Both mechanisms can coexist when a subsidiary is owned both by a foreign investor and a resident investor. In such cases, the profits are prorated according to the investors' share of equity. The consistency between the balance of payments and the rest-of-the-world account is thus achieved to the detriment of harmonization between the resident and non-resident sectors of the national accounts. Thus, it would be useful to examine the possibility of harmonizing and extending the restatement of reinvested earnings to all shares, regardless of who holds them.

The treatment of reinvested earnings shows that it is always possible to extract from the revaluation account a flow that will be restated as property income. If this flow is reinvested in a financial instrument in financial account, the consistency between the current account, accumulation accounts and balance sheets is maintained. This is also a way of "extracting" an identified component of the transaction from the valuation.

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Confronted with a radically different approach from both finance and corporate accounting, national accounts do not maintain the exclusion of unrealized gains and losses from current accounts comfortably or without providing for exceptions. Several mechanisms already add to the income account unrealized gains, which on principle are confined to the revaluation account. Those that correspond to the trading

margins of financial institutions – to the exclusion of insurance companies and pension funds – are restated as production; those that correspond to the retained earnings of foreign subsidiaries are restated as property income; they may eventually as a whole give rise to the calculation of tax, bonuses and welfare benefits that are fully recognized as income components.

Except in the case of reinvested earnings, no unrealized losses are included in these restatements, which are designed so as never to give rise to negative entries. The trading margins that form part of the production of financial institutions – to the exclusion of insurance companies and pension funds – are positive by construction. Indeed, it is difficult to conceive of a negative production. By the same token, taxes, bonuses, welfare benefits and dividends cannot be negative. Holding losses would require distinct mechanisms, such as an increase in social security contributions further to the holding losses of pension funds. Property income does not suffer this constraint because it can be received or paid out. Indeed, reinvested earnings can be negative (26.64).

3. Pros and cons of recording holding gains and losses as property income

The issue of incorporating holding gains and losses into income is raised by users at regular intervals. If the 2008 SNA refrains from examining such a subject with numerous implications for the system, it is nevertheless included in the research programme (A4.23).

3.1. The advantage of alternative conceptions of income

3.1.1. Regarding the income of financial institutions – to the exclusion of insurance companies and pension funds –

Holding gains and losses are all the more important in the published results of banks as their intervention on capital markets continues to expand, whether such transactions are designed to maximize the returns on their own portfolios, or owe to their capacity as "market makers", acting as

counterparties to customers' claims and thereby ensuring the liquidity of transactions. As the unrealized or realized holding gains and losses arising from such activities are not recorded in any income items in current accounts, this results in a widening gap between the vision provided by the latter and that given by private-sector accounts.

Such discrepancies can even be paradoxical: a financial company that sustains heavy holding losses on its market activities may see its net lending grow because these losses never form part of its expenses, while income tax expenses and the bonuses paid out to traders are considerably reduced. In France, the "Conseil national de l'information statistique" demanded a regular publication of the comparison between national accounts and business accounts for bank. It should permit a better communication and explanation about such at first sight paradoxical results.

Interest is paid out on financing that is, supplying buying power today that without finance would only be available in a future period. Like the SNA 1993, the 2008 SNA recognizes that net interest received by financial institutions pays in part for a service. Holding gains are profits acquired through transactions over different time periods. Do they for all that pay for a service when they are carried out by financial institutions?

The 1993 SNA and the 2008 SNA had partially answered positively by incorporating the trading margins on market transactions into the production of financial institutions – to the exclusion of insurance companies and pension funds –, these margins being by definition realized and positive. Should one go further and extend this restatement to all the realized and unrealized gains and losses of financial institutions? Admittedly one can acknowledge that financial institutions acting on their own account as much as for their clientele ensure market liquidity and do away with possibilities of arbitrage. However it is hard to define the constantly positive value of this service beyond the trading margins already accepted as part of production. On the other hand, these holding gains and losses obtained by both financial institutions and other agents in respect of the return on their investments could be fully recorded under property income. This will be examined below.

3.1.2. Regarding the cost of debt and the returns on investments

Swaps are incurred mainly to produce interests that may compensate the interest received or paid on loans and borrowings and can be used to adjust the yield of assets or the cost of liabilities during the period. As currently recorded, excluding interest on swaps (see 2.1), interest does not account for the leverage of such instruments, which nonetheless influence the overall yield of assets or the total cost of the debt for any agent. As a matter of fact,

The latter solution has prevailed for practical reasons, due to the growth out of all proportion in interest received and paid out on swaps. The fact is that swaps are not sold when their hedging is no longer relevant; they are offset on the market by swaps in the opposite direction. Private accounting authorizes netting with very restrictive conditions (same counterpart with a bilateral convention for netting, same maturities of the flows). The gross interest received on the one hand and paid out on the other thus accumulates, with no connection to the hedged notional amount. If net interest or net losses and gains were recorded, the swap-related flows would be brought into proportion. As for interest paid out and received on speculative swaps, it has no connection whatsoever with any balance sheet item of the entity. Its existence can break the link between interest received and the amount of interest bearing assets or between interest paid and the amount of debt. It is nonetheless part of the global return made by an entity that has opted to use such a lever.

It has been decided that such inflation of counterbalanced transaction would harm less in the financial accounts, under an entry dedicated to derivatives. However, only the UK record derivatives un-netted as they should be in SNA. The result is striking and derivatives represent 35% of the total balance sheets of depository corporations. In other countries, either netting (France), partial recording (Italy) or no recording at all prevail.

As a result of the adopted convention, which consists in recording all swap-related flows in the financial account, one can no longer calculate either the total cost of the liability or the periodic yield of investments using property income. Coming to a more refined treatment that separate interest paid in the current period and change in the discounting value of future interest would enhance the informative power of national accounts. In order to avoid misunderstandings, interest rates on swaps may either be netted or recorded separately. Furthermore, one can only calculate a periodic yield, not an ex post return¹³, unless it includes holding gains and losses that are not yet realized and thus are still putative.

3.1.3. Regarding return on capital and owners' equity

Limitations due to the exclusion of holding gains and losses from non-financial accounts are particularly clear-cut when one calculates the profitability¹³ of businesses, because all the components of the current accounts and balance sheets come into play. When this is calculated with national accounts, it clearly reveals the paradox of profitability defined in macroeconomics as the ratio of income stripped of any valuation element to fully valued owners' equity. So profitability thus defined decreases when businesses grow richer due to the valuation of their past investments, this "bonanza" not being taken into account in their capacity to capitalize on their investments. In other words businesses had to relate their profits to capital whose current value is higher than the costs they committed. The calculated return is that of new entrants in the business.

It may therefore be beneficial to adopt another definition of profitability, one that in its numerator would take into account not just the net operating surplus (for return on invested capital) less interest and taxes (for financial return), but also unrealized and realized gains on net worth [Cette, Durant, Villette, 2011]. It is indeed the unrealized and realized gains made over the period that should be taken into account with regard to the capital stock at the end of the period (unrealized gains) and its change since the beginning of the period (realized gains). The accumulation accounts provide these elements¹⁴. Profitability adjusted for valuation items is, as expected, more variable than conventional profitability. It does not show the long-term downward trends usually observed, more particularly for France. This observation would tend to indicate that the rise in the price of capital goods, in particular real estate, has tended to weigh down the profitability of businesses.

3.1.4. Regarding household savings

It is important to underscore the impact of gains or losses to understand household spending patterns [Durant, Frey, 2010], [Durant, Reinsdorf, 2008]. In the United States, households could adapt their spending to the existence of gains and losses. Accumulated gains on real estate and financial assets between 1975 and 2000 indeed went hand in hand with a fairly steady reduction in savings rates. Conversely, the appearance of holding losses in the early and late 2000s corresponds to rises in savings rates. In France, we see rises in household savings rates when real estate gains fall sharply, but we cannot identify a more long-term relationship. Unrealized and realized gains and losses in the period, which are recorded in accumulation accounts, can be used to analyse the effects of wealth, whether the impact of revalued net worth on consumer spending is positive, as it is in the USA, or impossible to show, as in France.

Beyond this economic connection, it may nonetheless be interesting to bring out "budgetary" connections. Inasmuch as households build up regular income by selling on their revalued property, one can quite simply ask oneself whether the savings concept as currently defined is still relevant. Because financing consumer spending in this way, even though for accounting purposes it is

¹³ In finance, yield is defined as the ratio of periodic income (interest, dividends, rents) to the amount invested (the 'principal'). Profitability adds realized gains and losses to periodic income. In macroeconomics, based largely on national accounting, unrealized gains and losses are not as a general rule included in profitability.

¹⁴ It may be advantageous to recalculate non-financial capital and its valuation with comparable rates of depreciation and indexes between countries.

equivalent in national accounts to financing through borrowing, is not equivalent in "budgeting" terms. In the latter case, the sums used will have to be repaid in the future, but not in the former. If we adopt this point of view, what should be added to income are the realized gains. Yet national accounts do not allow this restatement.

3.2. Can holding gains and losses be recognized in property income?

The discussion will focus first on total holding gains and losses and then on realized holding gains and losses.

3.2.1 What about total gains and losses?

Gains and losses are part of the difference between the value of assets at the start and the end of a period. They thus are evidenced by a flow in the accumulation account. In the current treatment thereof, this is a valuation flow (appendix, table 2). For the balance of the sector account and the one of the financial account to be equal, recording gains or losses on property income or in production for financial institutions implies recording the same amount in transactions on the financial account and excluding it correlatively from valuation flows. In other words, the valuation that is now paid as interest income is reinvested as a transaction flow under the instrument. This mechanism is already used in connection with reinvested earnings. Recording total gains or losses (unrealized and realized) in a non-financial account is thus consistent with balance sheets revalued at market price in each accounting period (appendix, table 3). While it concerns all holding gains already recognized in the revaluation account, it is however unnecessary as data are available to analysts in national accounts to make their own re-treatments. On the other hand, one can identify a particular category of unrealized and realized gains and losses. In that case, a special treatment should be defined in national accounts to restate these gains as production or transactions.

Recording the production of financial institutions in the form of trading margins, which was approved by the 2008 SNA, does indeed affect some of the realized gains. These gains, excluded from the valuation account, must be recorded in parallel on the production account and as a transaction on the asset that generated them. However, the methods used by financial accountants to calculate holding gains will probably miss the one that are obtained from buy-sell transactions made in the same accounting period.

3.2.1 Discussion on realized gains and losses

The same does not apply to charging to property income the sole holding gains realized in a given accounting period, which are calculated over the entire holding period.

Realized gains and losses are of particular interest because in contrast to unrealized gains and losses, they consist of a validation by a solvent buyer of a change in the price of an asset. The transactions that validate them already crystallize modifications in future income prospects ("front loading"). As such, they are funded by income derived from production or from loans. They are of interest because they let one determine *ex post* the final return on investments of economic agents.

Realized holding gains and losses however is a deceptively simple notion that needs to be defined more precisely.

First of all, one usually imagines that the winners are those who buy and sell an instrument in a bullish period and the losers are those who buy and sell in a bearish period. The seller makes a holding gain because he finds a buyer ready to pay a higher price than the past purchase price. To make a gain or a loss, one thus needs to successively make a purchase and a sale that are seldom with the same counterparty, except for derivative instruments¹⁵. Furthermore, if we only consider investors, holding

¹⁵ The case of derivatives is interesting: in a forwards and futures contract, A undertakes to sell and B to buy instrument X for a price of

gains and losses do not constitute a zero-sum game. If the value of the asset increases over a long period, investors as a whole are winners over the period. The real counterparty is in fact the debtor. Indeed, the 2008 SNA notes that the counterparty of holding gains recorded by the holder of a financial asset is the equivalent losses of the liable party (3.154).

However, while the debtor may take an interest in the changing price of its market commitments - even though this change in no way alters its commitments to its creditors - it is in no way affected by the holding gains and losses made since their initial purchase by participants on the secondary market of its securities. Recording holding gains and losses further to the change in value of the commitments in the debtor's account would amount to introducing a fiction: whenever a transaction on the secondary market of its securities took place, it would be traced as a total repayment of the debtor's commitment to the investor (debt redemption, repurchase of own shares), as the subsequent issue of a commitment on the same terms, except for the price, as a record of a gain or loss and as an alignment of interest that would henceforth be paid out on the market price. This would come down to adopting the creditor's point of view for everyone.

If of poor interest for debtors, realized holding gains through the holding period are of high interest for creditors who can thus calculate a global *a posteriori* return for their investment. This said, let's try to picture what should be realized interest rates if accounted for in the national accounts. What is looked for is the change in value between acquisition and sale of the asset. Yet this conception is incompatible with that of national accounts, which by revaluing its balance sheets at market price at each end of period traces accumulated holding gains and losses on the said period (3.183). To attain our goal, the entire history of holding gains and losses of the only assets sold during the period should be reconstructed. This is absolutely impossible with the aggregated data mostly used by national accounts.

Finally, while information on realized gains and losses is available in accounting records at the acquisition cost of businesses and thus contributes to their profit, it is no longer recorded in market price accountancy, where it can no longer be distinguished from unrealized holding gains. Households for their part may not all be fully aware of the amount of holding gains accumulated since acquisition. Thus the money released by the sale of an asset comprising a realized holding gain or loss in no way distinguishes the latter, even at the individual agent. This leads one to put into perspective the impact of such realized gains and losses on the behaviour of economic agents.

As a conclusion, charging realized holding gains and losses to property income would introduce a timing inconsistency, because the balance-sheet value of the asset only varies by the value acquired in the said accounting period (appendix, table 4). These realized holding gains and losses are thus charged to unrealized gains and losses. Charging only the portion of the realized gains and losses acquired in the accounting period would have no economic sense. Charging the gains and losses realized today to past periods during which they were acquired makes no sense either.

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In total, within the framework of national accounts, with market valuation at each end of period, recording holding gains and losses as revaluation in accumulation accounts instead of property income in current account is appropriate. However, retreatment of identified portions of revaluation as property income or production is possible as shown by the 1993 and 2008 SNA.

As part of a research programme for the future SNA, one could identify further valuation phenomena

100 in 3 months. If in 3 months' time instrument X is worth 120, A will have "lost" and B will have "won". In an uncertain world, the loss however is more than relative if A's motivation was to hedge at any cost against a possible fall in the price of X. Even in that case, the transaction price is set by two willing and independent counterparties, solely on the basis of commercial considerations, sometimes called "at arm's length" (3.119).

that in fact represent transactions and treat them using the model for reinvested earnings of foreign subsidiaries. An initial candidate for this examination would be the revaluation of equity, due to the allocation of retained earnings to own funds, for the part which is owned by resident groups (it is already done for the foreign owned part)..

For analytical purposes, one could test the implications of an alternative concept of income that would include such gains and losses. This may cast new light on the activities of banks, the profitability of businesses or the trend in household savings rates.

On the other hand, even if it is unquestionably advantageous to identify realized gains and losses with a view to measuring the overall return on the investments of economic agents, this cannot be provided by national accounts. The need to revalue the entire balance sheet at market price on each maturity date is totally incompatible with recognizing holding gains or losses made between the acquisition and the sale of an asset, therefore more often than not over more than one accounting period. The increasingly wide adoption of international corporate accounting, which is based on revaluation of balance sheets at market price on each date of maturity, will moreover tend to remove information on realized holding gains and losses from the very accounts of businesses.

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Appendix: scheme for restating realized gains and losses in property income

Table 1: share transactions

Eight shares are acquired in Q1 at the price of 90, two shares in Q2 at the price of 94. In Q3, one share is sold at the price of 135, repurchased at 130 and resold at 125. These transactions are made by IF.

The counterparty (ANF) is not represented here, but it undergoes symmetrical transactions and revaluations. It is the issuer. It is also the counterparty for the purchases and sales in Q3.

The revaluations are calculated using the FIFO (first in first out) method as it is usually the case.

Detail of share purchase and share transaction			Q1	Q2	Q3
transaction	n*v		720	188	-130
	number	n1	8	2	-1
	value per unit	v1	90	94	135
	number	n2			1
	value per unit	v2			130
	number	n3			-1
	value per unit	v3			125
FIFO revaluation			16	76	255
	realized in the period		2	8	60
	unrealized		14	68	195
closing balance	N*V		736	1000	1125
	nombre	N	8	10	9
	value per unit	V	92	100	125

In Q3, the realized gain relates to the instruments sold.

The gain actually realized by IF on its share purchases is $1*(V1-VQ2) + 1*(V3-VQ2) = 135-100$
 $125-100 = 35+25 = 60$

The loss actually realized by ANF on its share purchases is $1*(V2-V1) = -5$

In Q3, the unrealized gain relates to instruments held in the portfolio at the end of the period.

IF's unrealized gain in assets equals $N1*(V1-V0) = 8*25 = 195$

ANF's unrealized loss in liabilities equals $10*(VQ3-VQ2)=10*25=250$

Table 2: sequence of accounts according to the current methodology

Here we show an economy with two sectors, a financial sector (FI) and a non-financial sector (NFA), representing the functions of households and non-financial companies. Each sector produces, FI pays salaries that NFA receives. To produce, NFA also pays its salaries that are omitted to simplify matters. FI receives deposits, NFA funds itself through shares. The initial net worth comprises a deposit of 1000 by NFA with FI.

In this simplified non-financial account, sources of funds are marked with the plus sign (+) and application of funds with the minus sign (-).

		Q0		Q1		Q2	
		FI	NFA	FI	NFA	FI	NFA
current account							
	Production	20	100	20	100	20	100
	Salaries	-25	25	-25	25	-25	25
	holding gains and losses						
	consumption	-10	-110	-10	-110	-10	-110
	net lending/borrowing	-15	15	-15	15	-15	15
financial accounts							
assets	deposits		735		203		-115
	shares	720		188		-130	
liabilities	deposits	735		203		-115	
	shares		720		188		-130
	net lending/borrowing	-15	15	-15	15	-15	15
revaluation account							
assets	deposits						
	shares	16		76		255	-5
liabilities	deposits						
	shares		16		76	0	250
	revaluation account balance	16	-16	76	-76	255	-255
closing balance sheet							
assets	deposits	0	1735	0	1938	0	1823
	equities	736	0	1000	0	1125	-5
liabilities	deposits	1735	0	1938	0	1823	0
	equities	0	736	0	1000	0	1120
	net worth	-999	999	-938	938	-698	698

Table 3: sequence of accounts with unrealized gains restated in property income

Account consistency is maintained thanks to a restatement comparable to that of reinvested earnings. The unrealized gains and losses are "extracted" from the revaluation account, introduced into property income, reinvested in a financial instrument.

The counterparty of the gains and losses on a held asset is the issuer.

The net worth in the form of shares at the end of each period equals that of the scenario without restatement because total transactions and valuations are unchanged. By the same token, the flows of deposits are not modified because the payments are not modified.

All gains and losses are transferred to property income. None are recorded on the revaluation account any more. Account consistency is not disrupted. This restatement is perfectly compatible with balance sheets revalued at market price at the end of each period.

		Q0		Q1		Q2		Q3	
		FI	NFA	FI	NFA	FI	NFA	FI	NFA
current account									
Production				20	100	20	100	20	100
Salaries				-25	25	-25	25	-25	25
holding gains and losses				16	-16	76	-76	255	-255
consumption				-10	-110	-10	-110	-10	-110
net lending/borrowing		0	0	1	-1	61	-61	240	-240
financial accounts									
assets									
deposits					735		203		-115
shares				736		264		125	125
liabilities									
deposits				735		203		-115	
shares					736		264		250
net lending/borrowing		0	0	1	-1	61	-61	240	-240
revaluation account									
assets									
deposits									
shares									
liabilities									
deposits									
shares									
revaluation account balance		0	0	0	0	0	0	0	0
closing balance sheet									
assets									
deposits			1000	0	1735	0	1938	0	1823
equities				736	0	1000	0	1125	125
liabilities									
deposits		1000		1735	0	1938	0	1823	0
equities				0	736	0	1000	0	1250
net worth		-1000	1000	-999	999	-938	938	-698	698

Table 4: sequence of accounts with realized gains and losses restated in property income

The gain realized in Q3 was accumulated in Q1, Q2 and Q3. Its total amount, charged to property income only in Q3, and correlatively deducted from the revaluation account, exceeds the amount that was actually accumulated in Q3. Reallocating the realized gains to the periods in which they were actually accumulated would restore consistency between realized gains and balance sheets that are revalued annually. This however makes no economic sense: it is impossible in Q1 to consume gains that will be realized in Q3. In Q1, the gain is unrealized.

Furthermore, to ensure consistency between a financial and a non-financial account, the gain must be reinvested in a financial instrument. Since these are securities that are rightly taken out of the portfolio, the notion of "reinvestment in a financial instrument changes meaning: it refers to the past.

In total, recording realized gains and losses in non-financial accounts seems technically impossible in the light of these attempts.

		Q0		Q1		Q2		Q3	
		FI	NFA	FI	NFA	FI	NFA	FI	NFA
current account									
	Production			20	100	20	100	20	100
	Salaries			-25	25	-25	25	-25	25
	holding gains and losses							60	-60
	consumption			-10	-110	-10	-110	-10	-110
	net lending/borrowing	0	0	-15	15	-15	15	45	-45
financial accounts									
assets	deposits				735		203		-115
	shares			720		188		-70	125
liabilities	deposits			735		203		-115	
	shares				720		188		55
	net lending/borrowing	0	0	-15	15	-15	15	45	-45
revaluation account									
assets	deposits								
	shares			6		76		195	
liabilities	deposits								
	shares				16		76		195
	revaluation account balance	0	0	6	-16	76	-76	195	-195
closing balance sheet									
assets	deposits		1000	0	1735	0	1938	0	1823
	equities			736	0	1000	0	1125	125
liabilities	deposits	1000		1735	0	1938	0	1823	0
	equities			0	736	0	1000	0	1250
	net worth	-1000	1000	-999	999	-938	938	-698	698