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# Holding Gains and the Loss of Theoretical Unity

Michael Wolf

For additional information please contact:

Name: Michael Wolf
Affiliation: Statistics Sweden

Email Address: michael.wolf@scb.se

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# Holding gains and the loss of theoretical unity

**Michael Wolf***

**Abstract:** The attempt of including real holding gains in the income concept of the System of National Accounts (SNA) has so far been without success. This is primarily due to the demand of consistency in the SNA. Real holding gains are the outcome of relative price changes. If holding gains are included in GDP this also means that other volume concepts of the SNA has to be transformed to allow for changes in relative prices. Until a consistent national accounting framework founded on relative prices has been established the SNA only can be changed in a restricted way to show holding gains accounted in the system as redistributing income between institutional sectors.

***Wolf: National Accounts Department, Statistics Sweden;** michael.wolf@scb.se **The views expressed in this paper are solely those of the author and do not necessarily reflect official positions of Statistics Sweden**

## Introduction

The impact of holding gains/losses in the System of National Accounts (SNA) has been the object of much discussion. It is a matter of great importance which has not yet been satisfactory settled. The main reason for this lies in the fact that the two economic theories which has influenced SNA the most, the Keynesian Macro Theory and the Neoclassical Micro Theory, differ in their view on the phenomenon of holding gains as being part of income. To understand how holding gains should be accounted for and influence balancing items in the SNA we have to be clear on two things. First of all we need to know the characteristics of holding gains, how they arise and how they enter into the accounts of institutional units, secondly we need to relate holding gains to the main analytical purpose of the SNA.

The SNA2008 has been revised in respect of how holding gains are treated in the indirect calculation of insurance service output, but the fundamental definitions of output, production and generation of income have not been changed. Regarding insurance output there is a need to balance the holding gains included in benefits and actuarial reserves with a corresponding value as part of investment income (property income adjusted with holding gains). This change of the SNA does not, in my view, imply that it is possible to include holding gains in the definition of output in other activities.

I agree with other critics that the definition of value added in SNA is not satisfactory.[1] At the one side we have the possibility of including (unrealised) holding gains in the concept of domestic income on the other side we can define value added and operating surplus in a way of excluding all forms of holding gains, including wages paid out of holding gains. The paper explores these two alternatives and their consequences on the balancing items of SNA.

## SNA2008

During the work with the SNA2008 the treatment of holding gains and losses was keenly discussed. One reason for this is that the economic development the past 10-15 years has involved large variations in prices on raw materials and assets which as a consequence have given rise to substantial holding gains. In the National Accounts (NA) an asymmetry occurs when taxes on these gains are accounted in the current accounts but the realised holding gain mainly is accounted in the accumulation accounts. Balancing items like disposable income and savings run the risk of being misleading.[2]The discussion did mainly deal with production of financial services and insurance but also an over arching variable as the consumption of fixed capital has been the object of this debate.

The proposal for treating financial intermediation in the same way as wholesale and retail trade was lent off mainly because the buying of financial instruments on own account are not normally done at prices below the market price. This implies that the difference between output (selling price) and input (buying price) only depends on price changes, i.e. holding gains on inventories.

The calculation of the insurance services according to SNA2008 involves above all a different understanding of the concept property income than what was the case earlier. One part of property income is so-called property income to insurance policyholders (investment income

[1] Cf. Fixler and Moulton (2001)
[2] Cf. Lequiller (2003)

on life insurance technical reserves). This item may according to SNA2008 be financed out of holding gains which not was the case with a strict interpretation of SNA1993. [3] In SNA1993 it was defined as interest, dividends, rent and operating surplus on the renting of buildings. The reinterpretation should be seen as a clarification of how the investment income should be accounted.

When insurance corporations allocate holding gains to the policyholders their liabilities are increasing. The holding gains must also be included in some of the transactions between insurance corporations and policyholders. Otherwise, if the holding gains are not included, the indirectly measured insurance services will be underestimated.

In an accounting system every change of assets and liabilities is equivalent to a transaction or other change in value. Each transaction has two sides, one in the non-financial accounts and one in the financial accounts, and is accounted by the two institutional units involved which give rise to four entries in the accounts, two for each unit. Exceptions from this rule are only made when institutional units are created or liquidated.

But according to SNA2008 there are two additional exceptions to this rule: super dividends and reinvested earnings. The tricky thing in the case of super dividends (which includes dividends paid out of holding gains) is that it should be accounted as a volume change, but without any change in the number of outstanding shares. This challenges in my view the understanding of volume.

It might seem inconsistent that SNA allows holding gains to be used for the financing of one kind of transactions (investment income to insurance policyholders) but not for another kind (dividends). This implies that property income should be understood in two different ways. One as genuine (pure) property incomes[4] financed out of generated income alone and another as mixed (impure) property income which also might be financed out of other sources like holding gains. Financial assets like bonds and shares are thus treated differently but the reasons for such a division are not particularly convincing.

**Holding gains/-losses in the SNA**

In the SNA both realised and unrealised holding gains/-losses (from now on referred to as: holding gains) are mentioned. Realised holding gains arise when assets and liabilities owned at the beginning of a period are sold under the period or when they are both bought and sold under the same period. Non-financial transactions are accounted in the NA at actual market prices and the holding gains have an impact on balancing items like net lending/-borrowing but does not, from a principal point of view, create any accounting problem.

The reason for this is that the realising of holding gains is always made by a transaction with two parties involved. The net result of these gains and 'losses' is zero. They cancel out in the sense that realised holding gains always are financed by some counterparty. The counterparty is transferring part of its income/wealth to the party realising the holding gain.

The seller makes a gain and the buyer pays a higher price (implicit loss) than the seller did at the time of acquisition and hereby transfers resources to the seller. The impact on balancing

[3] This applies only to defined benefit schemes
[4] Cf. Harper (2006)

items is the same in absolute value but in different directions (opposite signs) and the net result is zero. The buyer might not regard this as financing a holding gain and vice-versa in the case of losses.

Realised holding gains are already accounted as part of the transaction value in the corresponding assets and liabilities. This means that it is only a theoretical and practical matter where in the system they should be accounted rather than if they are included or not in the current or accumulation accounts.

Regarding unrealised holding gains no transactions are made and they arise when prices changes after the time of acquisition. In this case it is a matter of a one-sided change because no counterparty has yet financed the holding gain. In the case of financial assets and liabilities the corresponding change is accounted according to SNA in the accounts of the counterparty but as long as no transaction has taken place it should only be regarded as a potential holding gain.

In the case of unrealised holding gains it is only a matter of a pure change in value without any kind of change in the value of transactions. Another example of this is the stock of produced fixed assets and the corresponding consumption of fixed capital. The treatment of unrealised holding gains seems to be the genuine problem of the impact of holding gains on income and balancing items.

In an accounting period assets in general, and non-financial assets in particular, are held and not traded which means that the main part of holding gains will be unrealised. Furthermore, a lot of assets like real estate are transferred between institutional units in the same sector which makes the net of transactions for a sector even less important.

Nominal holding gains are divided into a neutral and a real part. The neutral part corresponds to the necessary price change for maintaining the purchasing power of the asset. The real part is equal to the change of purchasing power. So from now on by holding gains we have to mean those which redistributes purchasing power between institutional units when discussing how to measure the change of economic activity.

In reality realised holding gains corresponds to the redistribution of incomes between buyers and sellers. By redistribution of incomes we must understand incomes in a broad sense. Incomes include both previous and future incomes. Taking a loan to pay an asset means the using up of future incomes but the net impact on net lending will be the same as if it was financed out of current incomes or savings, i.e. previous incomes.

Normally redistributions of incomes are undertaken by transactions accounted in the accumulation accounts (investment goods, financial assets) which does not have any impact on balancing items like primary incomes (B.5) or disposable income (B.6). In this sense, regarding a specific institutional sector or unit, the redistribution of incomes is hidden because it does not have any impact on the accounted income of the sector or unit.

According to SNA2008 holding gains allocated to insurance policyholders have been made explicit in the allocation of income account as part of property income. These holding gains are not realised and still hidden as income in the accounting system. But they have an impact on primary and disposable income for the sectors involved because insurance corporations

make promises based on the realisation of these potential gains.[5] The alternative to this treatment would have been to account the distributed holding gain as a capital transfer (D.9) and as a consequence make a change in the algorithm for the calculation of insurance services.

In the discussion of holding gains expected holding gains are sometimes referred to as the appropriate concept. Expected holding gains deviates from actual holding gains because the price changes have been other than what was expected at the time when investment and production decisions were made. Expected holding gains would in such a case be included in income because they are included in the calculated profit and loss account of the institutional unit.[6]But if NA shall be a statistical description of the economy we have to stick to the actual market transactions.

Expected prices are used in a theoretical context to describe the judgement of the future economy at the time of investment. This is clearly something else than the aim of SNA. Besides that, what is in the expected gain of one unit is not automatically in the expected loss of some other unit. When expected values are used asymmetries will occur if these, except for a few goods, are possible to observe[7]. Units acting on expected price changes which not are realised have acted on false assumptions and have to take the consequences whether they are to the better or the worse than expected.

**The purpose of the SNA**

The most used measure of economic activity is GDP. GDP is also identical to generated income but in the latter case it is first and foremost generated income, net (NDP) which is of interest after allocation and redistribution of incomes resulting in the balancing item disposable income.

The purpose of the SNA as it is formulated is the following:

"The System of National Accounts (SNA) is the internationally agreed standard /.../ on how to compile measures of economic activity"[8]

In the SNA the most recognised measure of economic activity is defined, the volume measure of GDP (GDP at constant prices). The analytical perspective of the SNA is that changes in economic activity between two periods is measured as the weighted output volume with one of the periods price structures as weights (constant prices). With this perspective all relative price changes are ruled out of the volume estimate whether they are expected or not. This goes for price changes on inventories as well as for unrealised holding gains on investment goods and the changes in terms of trade with the rest of the world. The alternative is to include such changes in the concept of production and generated income.

[5] If such promises are unimpeachable they can cause trouble as it did for some Swedish insurance corporations when the stock market went down in 2001 causing them solvency problems.
[6]Cf. Schreyer and Stauffer (2003)
[7] Accounting for expected prices and values has wider consequense if we regard all expected prices including those used for short term production decisions. Then we also should regard expected prices on inputs and outputs. This implies that it is not the actual change in terms of trade which will make a difference between GDP and real GDI but the expected change.
[8] SNA2008 para. 1.1

The concept of production aims at capturing new values created in an economy in a specific period. These values are created in the production by the using up of among all, intermediate goods and labour power. It is not a matter of revaluing existing goods. Such a revaluation occurs when previously produced goods are traded on a market again but at other prices. The price difference for a single object amounts to the holding gain.

Durable goods which are traded on a second hand markets can be treated in different ways. The treatment according to SNA is to let them pass the retail trade again where the trade margin corresponds to value added. It is a service paid by the unit disposing of the second hand good by accepting a lower price than what the retailer sells it at.

Another way to treat this transaction is as a redistribution of income. The reason put forward by classical economists like Adam Smith is that the transaction does not add any new value to the economy as long as the good is unaltered in a physical meaning.[9] The service noted in the SNA has no extension in time but is consumed at the same moment it is produced.

### Income according to SNA

In the SNA three important concepts of income are defined. They can all be measured gross or net, i.e. after the deduction of consumption of fixed capital. These concepts are: generated income, primary income (GNI) and disposable income. As mentioned earlier there also exists an alternative to the volume measure of GDP and that is real GDI. In the SNA differences between these concepts is clarified[10] (cf annex A). The meaning of the differences to the total economy are as follows:

Production=expenditure=generated income (GDP in volume)
+ trading gains/-losses due to changes in the terms of trade
= generated income after international trade (real GDI)[11]
+ other income from rest of the world, net
= gross national income (GNI)
+ other current transactions from the rest of the world, net
= gross disposable income

Economic activity (GDP in volume) is not the same as real income. Due to changes in the terms of trade they can change in opposite directions to each other. In the accounting system this difference is made by the transition from the generation of income account to the allocation of income account. Each account has its own balancing item; operating surplus/mixed income and the balance of primary income respectively.

### Generation of income versus allocation of income

The two dominating economic theories having influenced the SNA are the Keynesian and the Neoclassical. Relative prices and their movements are of fundamental importance to the Neoclassical theory. Changes in relative prices mirrors changes in technique and/or

[9] Cf. Smith (1994) , pp. 360
[10] SNA2008 para. 15.186
[11] Unfortunately the expression ‘in real terms’ is used in two different ways in the SNA which can lead to some misunderstandings. Generated income (= GDP in volume) is described “as being in real terms” whereas real GDI is “measured in real terms”. SNA2008 para. 15.169 and 15.174 respectively.

preferences which to an open economy by international trade give rise to a different valuation of income (real GDI) than the volume measure of GDP.

According to Keynes relative prices also are influenced by the distribution of income (allocation in the SNA) which in turn depends on social factors.[12]The measure of real GDI is not unambiguous because it is influenced by how the generated income (the given quantity of goods and services) is distributed among the factors of production. When relative prices change, the nominal value of output and the real output deflator need not move in the same proportions. This implies that two different sets of prices can make the real value of the same basket of goods and services differ in magnitude.[13] The Keynesian and the Neoclassical theory do not reach the same conclusion regarding real GDI as a measure of the changes in economic activity. Nominal GDP as a measure of the level of economic activity is on the other hand accepted by both.

To Keynes employment was the by far most important indicator of economic activity, at least in the short run with a given production technique.[14]When the technique is changed the relation between output and employment will also change which makes comparisons in the long run less suitable. Keynes gave no solution to this problem. In the SNA this has been solved by using volumes of goods and services at constant prices.

So in this respect the SNA and the Neoclassical theory are not possible to reconcile. If this is due to strong influences from the Keynesian theory is hard to tell but nevertheless the fact remains that in the SNA there is made a sharp distinction between generation of income and the purchasing power adjusted real income. My conclusion is that according to SNA price changes are regarded as merely redistributing a given income measured in volume whereas the Neoclassical theory regards relative price changes as reflecting changes in the real value. As in many cases, particularly for dynamic economies, the truth lies probably somewhere in between.

This difference raises some problems because the Neoclassical theory also assumes identity between production and income, but in this case it is the real income we have in mind.[15] This implies that when production is measured as real value added, the impact of relative price changes like trading gains also have a role to play. Such a change of the SNA will not come easy.

**Holding gains as redistributed income**

The differences between the theories regards price changes in general and therefore holding gains are also included. But holding gains are specific because it is price changes on production in earlier periods. Holding gains on financial assets and liabilities can be nothing else but redistributing of income. Even though financial enterprises calculate with holding gains as part of their net result such gains are not the outcome of a productive activity undertaken by the financial enterprise.

For other non-produced assets like land it is in the same way. When the price of land increases, without any costs for land improvements, the price change is not the result of any

[12] Cf. Keynes (1997), p.91 and pp. 262
[13] Cf. Leijonhufvud (1968), p. 27 and p. 51, Keynes (1997), pp. 39
[14] Cf. Keynes (1997), p.41
[15] Cf. Jorgenson and Griliches (1967)

physical alteration (size and quality) of the land in question to make it contribute to a larger volume produced. The value of land might have increased for other reasons like the use of more efficient methods and higher quality planting seed or by increased demand. With that we leave non-produced assets and focus on holding gains on produced assets.

If my suspicion is correct it will mean that concepts taken from the Neoclassical theory and applied on the SNA might give raise to problems in cases when the SNA uses concepts with an Keynesian bias. I think we have an obvious case of this when it comes to consumption of fixed capital.[16]Keynes uses for instance the concept 'replacement cost' in relation to assets which are not normally traded but still are used in production.[17]

When it comes to the consumption of fixed capital Keynes points out that the accountant method of distributing the value of the investment equally over its service life "has the advantage of ensuring that the windfall gain or loss shall be zero over the life of the equipment taken as whole".[18]Holding gains are thus representing redistributions between institutional units in time and space. Redistributions which, for each and every asset over the service life, cancel out.

What at the micro level for one institutional unit might be understood as an income due to a holding gain will aggregated to the macro level cancel out because someone must in the end finance the holding gain.

In the remaining part of this paper I will consider two alternatives to the current treatment of holding gains in the SNA. Finally I propose how holding gains can be included in disposable income. The two cases under consideration are:

1) Consumption of fixed capital as the difference in value between two equivalent investment goods with an age difference of one period (one year) and with regard to relative price changes, i.e. substituting replacement cost for the real value.
2) Transactions financed by holding gains or income from previous periods for example wages in corporations only trading with assets on own account.

**Consumption of fixed capital**

According to the SNA consumption of fixed capital is measured as the reduction in value between the beginning and the end of a period for one and the same investment good. The valuation is made in the average prices of the period or a base period. This is in accordance with replacement costs, the supply price[19] of an equivalent investment good in the actual period or base period.

The Neoclassical alternative put forward in the SNA update process means instead at a given point in time to compare two equivalent investment goods of one period difference in age. The difference in real value corresponds to the consumption of fixed capital. In this case the relative price changes will influence the valuation and this is the important difference between the two methods. If prices on investment goods increases faster than the average price level

[16] Ahmad et al (2005) also face the problem of incorporating the Neoclassical concept of depreciation
[17] Cf. Keynes (1997), p. 71
[18] Cf. Keynes (1997), pp.58
[19] Cf. Keynes (1997), p.135 and p. 71 Keynes uses supply price and replacement cost synonymously

there is a real holding gain made on the assets and as a consequence the consumption of fixed assets will be offset by an equal amount.

When it comes to GDP this difference only gives differences to output valued by the production cost method in the government and NPISH sectors. But the difference in method influences the net concepts of all sectors and balancing items like net disposable income will therefore differ (cf. Annex B for a numerical example).

The reason why net lending is unaffected by this difference is that the financing of the production is the same, it is only a matter of including an unrealised (potential) holding gain or not.

Every transaction in the NA has to have a counterparty which is missing in this case. The counterparty is unknown and the potential cost can accordingly not be properly accounted. Consequently, it was correct to reject the proposition of including the Neoclassical concept because in the end it would have been a departure from the established view of the SNA.

**Transactions paid out of holding gains**

All payments can to a certain extent be financed out of holding gains. It is hard to know when this is done. For some transactions like dividends it has been argued that there should be no doubt that they can be view as being paid out of incomes. Dividends paid out of holding gains are classified as something else than property income. As a parallel to this I would also like to add wages and other remuneration to employees not contributing to output.

Employees in financial corporations who mainly are trading in own account financial assets of the corporations do not contribute to the production. They rather manage the financial portfolio of the corporation. The receipts to this kind of activity are a mix of property income (interest and dividends) and holding gains. The value added is normally negative in such activities and it is from a principal point of view doubtful whether the employees and their remuneration should be included in employment and wages of the economy.

The reason for including these employees depends among all on the vague definition of value added in the SNA. The definition of production is not based on the characteristics of the value creating process but rather if any market transactions are made or not. This fact is amplified by the convention to include all wage earners among employees.[20]

But markets transactions are not identical with economic activity which some financial transactions are example of and therefore a clearer definition of production and value added in the SNA is needed. Productive activities normally generates a positive operating surplus. Activities which are financed by the redistribution of incomes and generating holding gains should not be included in the production domain except when they form part of a larger unit and they are of minor importance and as such do not to any considerable extent influence economic analyses like productivity measurement.

[20] Cf. Utz-Peter Reich (1991)

## The accounting of holding gains

In this final part of the paper I will propose a coherent way of accounting for holding gains. In this way holding gains will mainly influence disposable income and savings of institutional sectors. But before we deal with the accounts two things has to be emphasised. First of all, generated income should not be influenced by holding gains because we still want to maintain the identity between GDP from the production and income sides of the economy. Other balancing items both can be and have earlier been influenced by holding gains or transactions paid out of holding gains.[21] Secondly, unrealised holding gains cannot be accounted for because the counterparty is not known.

The view I have put forward is that holding gains should be seen as redistribution of income. It is done voluntarily by the mutual agreement of the transaction involved. The redistribution is made out of income from the current period, saved income from previous periods or future income by lending. Holding gains can be divided into two main categories. The first category consists of realised holding gains when assets and liabilities changes ownership. The second category includes some specific transactions made possible by holding gains and which otherwise would not have taken place.

If we want to include holding gains in the income accounts we need to identify them and move them to an appropriate place in the accounting system. When dealing with the accounts we must remind ourselves that what we put in the accounts are nominal values. One reason for moving the holding gains is to bring them together with taxes paid on them. The balancing item will in this respect lie closer to the what is the disposable income of an institutional sector when it comes to decision on how much to consume and save. But it is important to note that income redistributed within the same sector will have no impact on the balancing item, though such redistributions can nevertheless influence the behaviour of individual units in the sector.

The accounts can be rearranged by moving the holding gain part of the transaction in which it is included (cf. Annex C for an example). I have chosen to keep the definition of national income (GNI) and therefore put the redistributions after the balancing item, primary income B.5 but prior to disposable income, B.6.

But in reality it will be hard not to say impossible to separate holding gains out of every transaction. The holding gain might have been accumulated during several years and information on when the previous transaction was made is needed together with information on other changes (improvements and extensions) made to the asset.[22]

## Concluding remark

I have argued that the problem of how holding gains should be treated in the SNA is not possible to solve with a general reference to economic theory. This, I think, has also become apparent during the SNA update process. The two dominating economic theories, the Keynesian and the Neoclassical, view this phenomenon in different and incompatible ways.

We are therefore facing a choice between two alternatives. We can stick to the current volume measure of GDP or switch to the alternative measure of real GDP (=real GDI). The volume

[21] Cf. Harper (2006)
[22] Cf. Lequiller (2003)

measure of economic growth ignores relative price changes. These are on the other hand essential to the real measure. But before any definite choice is made the consequences of abandoning the current definition must be thoroughly investigated.

If we look upon holding gains as redistributions of income it will, from a principal point of view, be possible to let holding gains have an impact on concepts like disposable income and savings. What can be held against such a treatment are the statistical problems involved in measuring holding gains on the transactions in which they are realised. This leads me to the conclusion that SNA has a balanced approach to the accounting of holding gains.

According to my view it is also necessary to make a more precise definition of production and value added in the SNA, particularly in the case of financial activities. The current description is too indirect to give a good guidance. The fact that a bank has employees and earns money on market transactions is not sufficient as criteria for being a producer. Therefore SNA has focused on the role as a financial intermediary but not even this definition has sustained which the reinterpretation of financial activities in SNA2008 shows.

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## Annex A: Excerpt from the SNA2008

### 3. The interrelationship between volume measures of GDP and real income aggregates

15.186 The usual way to calculate real income figures is to start from real GDI and then follow the normal sequence of income aggregates, but with every intervening adjustment deflated to real terms. This is illustrated as follows:

a. Gross domestic product in volume terms:,
*plus* the trading gain or loss resulting from changes in the terms of trade;

b. *equals* real gross domestic income;
*plus* real primary incomes receivable from abroad;
*minus* real primary incomes payable abroad;

c. *equals* real gross national income;
*plus* real current transfers receivable from abroad
*minus* real current transfers payable abroad;

d. *equals* real gross national disposable income;
*minus* consumption of fixed capital in volume terms;

e. *equals* real net national disposable income.

## Annex B: Consumption of fixed capital and holding gains

The difference between the SNA and the neoclassical theory is given a numerical example in this annex. With simple examples it is difficult to illustrate complicated issues without introducing unintended inconsistencies. This is a stylized example to make the differences clear without laying claim on being wholly consistent.

The assumptions made are:

1) All output is market output which has increased in volume without increases in intermediate consumption or labour input.
2) Prices on output and intermediate consumption has increased continuously.
3) Intermediate consumption is imported and output consists of consumption goods for domestic use and exports and to a small part of investment goods used to replace the loss of production capacity due to wear and tear.
4) Wages are unchanged in nominal terms and the net operating surplus is divided between dividends and net lending (savings).
5) Export is used to finance all imports.
6) Prices on machinery (investment) has only increased during the second period and is accounted as a holding gains in the revaluation account (SNA) or as a reduction of consumption of fixed capital (neoclassical).

The price on machinery increases continuously with 5 percent from the beginning to the end of period 2. Other prices on output increases about 2 percent both between the periods and under each of the periods. Because output is produced is paid continuously the price change will be the same weather it is measured during a period or as a change in average prices between the periods. Income is also paid continuously and the real value of a given income decreases about 2 percent from period 1 to period 2.

When it comes to consumption of fixed assets in nominal values there are two differences between the SNA and the neoclassical alternative.

1) The price change according to SNA regards average prices between the periods which amounts to 2.5 percent in the example. In the alternative the price change is recorded during the second period and is twice as high or 5 percent.
2) The price change according to SNA is only recorded for the part which corresponds to consumption of fixed capital. In the alternative on the other hand the entire holding gain is accounted for as offsetting part of (2 units) the consumption of fixed capital.

**Balance sheet, non-financial assets (nominal values)**

| | Period 1 Nominal | Period 2 Nominal SNA | Period 2 Nominal Neo-classical |
|---|---|---|---|
| **OBn** | **40** | **40** | **40** |
| **B.101Transactions** | **5** | **5** | **5** |
| **B.102/3 Other flows** | **-5** | **-3** | **-3** |
| **B.102 OCV** | **-5** | **-5** | **-3** |
| **B.103 Revaluations** | | **2** | |
| **CBn** | **40** | **42** | **42** |

| Period 1 Nominal | | | | Period 2 Nominal SNA | | | | Period 2 Nominal Neo-classical | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Uses** | | **Resources** | | **Uses** | | **Resources** | | **Uses** | | **Resources** | |
| P.2 | 45 | P.1 | 150 | P.2 | 50 | P1 | 158 | P.2 | 50 | P.1 | 158 |
| B.1b | 105 | | | B.1b | 108 | | | B.1b | 108 | | |
| K.1 | 5 | | | K.1 | 5 | | | K.1 | 3 | | |
| B.1n | 100 | | | B.1n | 103 | | | B.1n | 105 | | |
| **Uses** | | **Resources** | | **Uses** | | **Resources** | | **Uses** | | **Resources** | |
| D.1 | 50 | B.1n | 100 | D.1 | 50 | B.1n | 103 | D.1 | 50 | B.1n | 105 |
| B.2n | 50 | | | B.2n | 53 | | | B.2n | 55 | | |
| **Uses** | | **Resources** | | **Uses** | | **Resources** | | **Uses** | | **Resources** | |
| D.4 | 40 | B.2n | 50 | D.4 | 43 | B.2n | 53 | D.4 | 43 | B.2n | 55 |
| | | D.1 | 50 | | | D.1 | 50 | | | D.1 | 50 |
| B.5n | 100 | D.4 | 40 | B.5n | 103 | D.4 | 43 | B.5n | 105 | D.4 | 43 |
| **Uses** | | **Resources** | | **Uses** | | **Resources** | | **Uses** | | **Resources** | |
| | | B.5n | 100 | | | B.5n | 103 | | | B.5n | 105 |
| B.6n | 100 | | | B.6n | 103 | | | B.6n | 105 | | |
| **Uses** | | **Resources** | | **Uses** | | **Resources** | | **Uses** | | **Resources** | |
| P.3 | 90 | B.6n | 100 | P.3 | 93 | B.6n | 103 | P.3 | 93 | B.6n | 105 |
| B.8n | 10 | | | B.8n | 10 | | | B.8n | 12 | | |
| **Uses** | | **Resources** | | **Uses** | | **Resources** | | **Uses** | | **Resources** | |
| P.5 | 5 | B.8n | 10 | P.5 | 5 | B.8n | 10 | P.5 | 5 | B.8n | 12 |
| K.1 | -5 | | | K.1 | -5 | | | K.1 | -3 | | |
| B.9 | 10 | | | B.9 | 10 | | | B.9 | 10 | | |
| **Chg assets** | | **Chg liabilities** | | **Chg assets** | | **Chg liabilities** | | **Chg assets** | | **Chg liabilities** | |
| F.2 | | F.4 | | F.2 | | F.4 | | F.2 | | F.4 | |
| F.4 | 10 | | | F.4 | 10 | | | F.4 | 10 | | |
| B.9 | 10 | | | B.9 | 10 | | | B.9 | 10 | | |

Now turning to real values please note that the relative price change of machinery is negative in the first period and positive in the second. The real value of the capital stock decreases from 40 at the beginning of the first period to about 39 at the end but recovers during the second period to about 41 at the end. The real holding gain amounts to about 2 units in the second period.

In this example we only illustrate the case for market output and the consequences of including real holding gains only have impact on net concepts. If non-market output is introduced the cost of using capital in period two would be lower in the real value case than in volume terms given raise to differences in value added and GDP.

When we use real valuation we should also, as I argue, in a consistent accounting framework value output and input in real values. GDP would in such a case be defined in approximately the same way as real GDI is according to annex A.

The valuation of consumption of fixed capital in volume is made in constant prices and has no impact on the value between periods.

**Period 2**
**Volume**

**SNA**

| | | | |
|---|---|---|---|
| **P.2** | **45** | **P1** | **155** |
| **B.1b** | **110** | | |
| **K.1** | **5** | | |
| **B.1n** | **105** | | |

**Period 2**
**Real values**
**Neo-classical**

| | | | |
|---|---|---|---|
| **P.2** | **49** | **P.1** | **155** |
| **B.1b** | **106** | | |
| **K.1** | **3** | | |
| **B.1n** | **103** | | |

Legend:
B1b, gross value added/ gross domestic product (GDP)
B1n, value added, net/ domestic product, net
B2n, operating surplus, net
B5n, primary income, net/ national income, net (NNI)
B6n, disposable income, net
B8n, savings, net
B9, net lending/-borrowing
B10, changes in net worth
Of which:
B101, transactions
B102/3, other flows
B102, other changes in volume
B103, revaluation

D1, compensation of employees
D4, property income

F2, currency and deposits
F4, loans

K1, consumption of fixed assets

OBn, opening balance, net
CBn, closing balance, net

P1, output
P2, intermediate consumption
P3, final consumption expenditures
P5, capital formation

## Annex C: Alternative accounting of holding gains

This is a summary of some ideas laid out in the paper. For the total economy this alternative accounting has no impact it only represents redistributions between institutional sectors. For sectors involved all items except wages paid out of holding gains have impact on disposable income and savings. 'Super dividends' also have an impact on net lending. The adjustment of wages is on the other hand counter balanced by an adjustment of operating surplus and therefore has an impact on primary income but once readjusted no further impact.

| **USES** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **S11** | **S12** | **S13** | **S14** | **S15** | **S1** | **S2** |
| **D.46** | **Realised holding gains/-losses on transactions** | | | | | | | |
| **of which:** | **gross fixed capital formation (P.51)** | | | | | | | |
| | **inventories and valuables (P.52, P53)** | | | | | | | |
| | **non-produced assets (K.2)** | | | | | | | |
| | **financial assets/liabilities (F)** | | | | | | | |
| **D.47** | **Remuneration financed out of holding gains** | | | | | | | |
| **of which:** | **Compensation of employees (D.1)** | | **15** | | | | **15** | |
| **D.48** | **Redistributed holding gains and wealth** | | | | | | | |
| **of which:** | **Pensions (D.44)** | | **25** | | | | **25** | |
| | **Dividends (D.42) ("super dividends")** | **40** | | | | | **40** | **10** |
| **B.5n adj.** | **Balance of primary incomes, net adjusted for the redistribution of income** | **115** | **75** | **100** | **650** | **50** | **990** | |

| **RESOURCES** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **S11** | **S12** | **S13** | **S14** | **S15** | **S1** | **S2** |
| **B.5n** | **Balance of primary incomes, net** | **150** | **100** | **100** | **600** | **50** | **1000** | |
| **D.46** | **Realised holding gains/-losses on transactions** | | | | | | | |
| **of which:** | **gross fixed capital formation (P.51)** | | | | | | | |
| | **inventories and valuables (P.52, P53)** | | | | | | | |
| | **non-produced assets (K.2)** | | | | | | | |
| | **financial assets/liabilities (F)** | | | | | | | |
| **D.47** | **Remuneration financed out of holding gains** | | | | | | | |
| **of which:** | **Compensation of employees (D.1)** | | | | **15** | | **15** | |
| **D.48** | **Redistributed holding gains and wealth** | | | | | | | |
| **of which:** | **Pensions (D.44)** | | | | **25** | | **25** | |
| | **Dividends (D.42) ("super dividends")** | **5** | **15** | | **10** | | **30** | **20** |

Legend:
S1, total economy
S11, non-financial corporations
S12, financial corporations
S13, governments
S14, households
S15, NPISH
S2, rest of the world accounts