

MARKET TRANSACTIONS IN THE NATIONAL ACCOUNTS

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This paper explains the treatment of market and non-market transactions in the national accounts. Different possibilities of defining these two types of transactions are discussed, and it becomes evident that a strong restriction of national accounts to market transactions only cannot be seriously taken into consideration. On the other hand, a system of supplementary tables is proposed which shows the market and the non-market transactions as such. Examples of tables of this kind are presented for the Federal Republic of Germany.

INTRODUCTION

National accounts serve many purposes at the same time, each of them requiring a different definition and presentation of national accounts figures. The present national accounts have the advantage that the various users can draw upon a uniform and consistent set of data, but there also is the disadvantage that it is not possible to provide optimum information for specific purposes. This disadvantage has understandably given rise to substantial criticism of the concepts of national accounts. On the one hand, for instance, the objection is raised that welfare development is not adequately reflected by the national product because many factors outside the market process are either not considered at all, or not appropriately, and on the other hand regret is expressed that due to the many imputed transactions and conversions in national accounts the presentation of the market events as such and the linking of macro and micro-data is not possible.

In the present discussions about the revision of the international systems of national accounts and in particular of the System of National Accounts (SNA) of the United Nations,¹ these criticisms are to be met by trying to achieve a greater flexibility in the presentation of the figures. Additional tables and sub-divisions are to be provided in order to enable the user of the data to combine the figures in such a way that they suit his specific purpose.

For the proposals concerning the revision of the SNA, two basic concepts can be distinguished:

- One approach intends to retain the basic structure of the SNA. Only minor corrections would be made in the SNA where this seems to be necessary. Existing results (the time series) would not be changed either. Great importance thus is attached to the continuity of the figures presented. The information content would be extended by supplementary tables and the like, however, so that new and modified demands made on national accounts can be met.²

¹United Nations (1968).

²This applies both to the recommendation of the Statistical Commission of the United Nations and to the opinion held by the majority of experts in the Working Groups on National Accounts at the international organizations.

- The other approach prefers to change certain rules of the SNA. A new core of the system would be created which would be limited to the observable market transactions or show the events as they are recorded in the accountancy of the individual business enterprises. In particular, imputed transactions would be eliminated. This is to simplify the presentation of the data and to permit the direct linking of the results with sets of microdata. At the same time, supplementary tables and parallel presentations (building-blocks) are to improve the informational value of national accounts.³

The two directions thus do not differ as to the objective, but in the ways and means of achieving the goal of improving the informational value of national accounts. Market transactions and non-market transactions (the latter including imputed transactions) play an essential part in these discussions, although it is not evident at all what a transaction, a market transaction or an imputed transaction really is and how they differ.

This paper first investigates how to define market transactions from the point of view of the overall national economy and how they can be distinguished from non-market transactions and imputed transactions. Then the implications of the inclusion of non-market transactions for the framework of national accounts are shown, and it becomes obvious that for reasons of consistency the inclusion of non-market transactions in national accounts cannot be entirely dispensed with. Finally, a practical example shows how, by means of transitional tables for enterprises and private households, market transactions can be shown as such even when retaining the present basic conception of the SNA.

These transitional tables may be considered a prototype for the approach to the revision of the SNA. They relate, however, to only two specific uses of national accounts, namely the in-depth analysis of market events and the improved ability to link the figures with sets of microdata, respectively. For other purposes, it will be necessary to provide for similar tables with other contents or parallel presentations in satellite systems and the like.

1. THE NOTION OF "MARKET TRANSACTIONS"

The SNA does not clearly distinguish between market and non-market transactions. Nevertheless, market transactions play an important part in the definition and coverage of the items to be presented. Although the European version of the SNA, the European System of Integrated Economic Accounts (ESA), makes a distinction between market and non-market production,⁴ this is not useful in defining market transactions. According to the ESA, goods not yet marketed (e.g. increase in stocks of finished goods) and goods and services not appearing on a market at all (e.g. own-account fixed capital formation, own-account production for consumption, or the use of owner-occupied dwellings), are to be included with production for the market.

One criterion for defining market transactions could be seen in the transaction/transaction principle which has been put forward by Ruggles and Ruggles

³See for instance van Bochove, C. A. and van Tuinen, H. K. (1986).

⁴EUROSTAT (1979), ESA, p. 42.

to define transactions in national accounts.⁵ However, to the author of this paper it is neither quite evident what is covered by the transactor/transaction principle in detail (e.g. are there any imputed transactions?) nor whether this is to be applied to the presentation of production accounts. Because of these open questions, the transactor/transaction principle will not be used to define market transactions in this paper.

Another criterion for defining market transactions could be established by falling back on business accounting. In this case, the items should be taken directly from the accounts of enterprises, private households, etc. But business accounting too comprises items which are not the result of market transactions, for example capital consumption, the setting up of a liability reserve, or own-account fixed capital formation. For this reason, this criterion too is not being considered for this purpose.

Market transactions could indeed include actual transactions between economic units, valued at the amount effectively paid. The following enumeration lists some such transactions, with alternatives to the way they are dealt with in national accounts:

- sales of own-produced goods and services instead of output,
- turnover of wholesale and retail trade instead of trade margin,
- purchases of input and investment goods instead of intermediate consumption and fixed capital formation,
- public expenditure instead of general government consumption,
- social benefits actually paid (received) instead of contributions including social contributions by employers and imputed social contributions,
- interest paid (received) instead of imputed bank service charges,
- payments made and received by life insurance companies etc. instead of the imputed insurance service charges.

The following comments are based on this narrow definition. Accordingly, market transactions are considered to comprise only transactions between economic units valued at the amount effectively paid. Transfers are also included, although in this case a distinctive feature of the market, namely prices asked and received, is by definition not present.

2. MARKET AND NON-MARKET TRANSACTIONS IN THE SNA

The items in the SNA are mostly defined on the basis of market transactions. This is recommended by the accessible statistical basis as well as the fact that in western countries the market is assigned a central role in coordinating individual planning. Market participants and their transactions therefore are normally the subjects on which economic policy measures are focused. From this point of view, the orientation of the SNA to market processes is not only expedient, but also meaningful as far as the use of results is concerned.

The above mentioned examples make plain however that the SNA does not present market transactions in a strict sense, but rather in a—in several respects—corrected or completed form. These differences affect particularly the output, the

⁵Ruggles, R. (1982), p. 25 and Ruggles, R. and N. (1985), p. 12.

total supply and the use of goods and services, as well as generated income. Since the distribution and redistribution of income are based mainly on monetary flows, market transactions are usually shown in this part of the accounts.

Table 1 gives examples of flows which in the SNA are treated differently from the underlying market transactions. This table also demonstrates the impact of imputed transactions on different items of the national accounts system. The amounts to which the respective differences add up are shown in tables 2 and 3. With regard to the individual items, the following helpful hints are given:

- In business accounting, own-account fixed capital formation is part of gross value added. But this, as an intra-firm transaction, is not marketed. If own-account fixed capital formation was not treated as part of output, there would be a reduction in fixed capital formation, operating surplus and disposable income as well as in saving by the amount of own-account fixed capital formation minus related capital consumption.
- Increases in stocks are a periodical correction of market transactions to show production and consumption of goods and services on an accrual basis.
- Own-account production for consumption covers different items like agricultural products consumed in agricultural households and withdrawals of manufactured goods for final consumption as well as imputed rents of owner-occupied dwellings. Following the basic principles of national accounts, this increase of output has to result in an increase in generated, distributed and disposable income.
- Compensation in kind covers non-monetary “payments” of wages and salaries. Normally this should be agreed contractually. As far as the Federal Republic of Germany is concerned, only payments in kind by mining industries and breweries together with public expenditure on clothing and food for the armed forces are worth mentioning. The value of these goods is included in output, compensation and final consumption of employees.
- The SNA does not specify exactly how to handle intra-firm transactions. It is also unclear whether market transactions between enterprises of the same branch have to be netted out. According to the European System of Integrated Economic Accounts (ESA), intra-firm transactions have to be added in part to output and intermediate consumption.⁶ On the other hand, market transactions in input goods between enterprises belonging to the same branch normally should be ignored.⁷ This ESA regulation seems reasonable as far as input-output analysis (constant input coefficients) is concerned, but it is questionable with regard to the national accounts. Besides, this ESA regulation is inconsistent with the ESA definition of output which is defined to cover all marketed goods and services.⁸
- The presentation of the output of trade and transport which shows only their respective margins is very useful from the economic point of view.

⁶EUROSTAT (1979), p. 123.

⁷EUROSTAT (1970), p. 113 ff.

⁸EUROSTAT (1979), p. 42.

TABLE 1
NON-MARKET TRANSACTIONS AND THEIR IMPACT ON NATIONAL ACCOUNTS

Non-market transactions	Supply ⁸	Use of goods and services			Generation of income		Distribution of Income			Disposition of Disposable Income		
	Output (Imports)	Intermediate Consumption	Final Consumption	Capital Formation ¹	Compensation of Employees	Operating Surplus	Compensation of Employees	Entrepreneurial Income ²	Current Transfers	Disposable Income	Final Consumption	Saving
1. Own-account fixed capital formation	+	.	.	+	.	+	.	+	.	+	.	+
2. Increase in stocks of output goods	+	.	.	+	.	+	.	+	.	+	.	+
3. Increase in stocks of input goods	.	-	.	+	.	+	.	+	.	+	.	+
4. Own-account production for final consumption	+	.	+	.	.	+	.	+	.	+	+	.
5. Compensation in kind of employees	+	.	+	.	+	.	+	.	.	+	+	.
6. Own-account production for intermediate consumption	+	+
7. Netting out of sector-internal transactions	-	-
8. Trade and transport margins	-	-
9. Social benefits in kind	-	-	± ³	.	.	.	.	.	+	±³	± ³	.
10. Imputed bank service charge	+	+ ⁴	.	.	.	+ ⁴	.	.	.	.	.	.
11. Imputed insurance service charge	+	(+)	+	.	.	+	.	.	- ⁵	+	+	.
12. Non-market services	+	.	+	+	.
13. Netting out of transactions in land and in existing consumer durables ⁷	(+)	.	±	±	.	(+)	.	.	.	±	±	(+)
14. Netting out of sector-internal transfers	-	±	.	±
15. Employers' actual social contributions	+	.	±	.	.	.
16. Imputed social contributions	+	-	+	-	+	.	.	+
17. Netting out of financial transactions

¹Fixed capital formation and increase in stocks.

²Entrepreneurial income, withdrawals and property income.

³Increase (+) for private households, and decrease (-) for general government.

⁴The effect on total operating surplus is zero when the service charge is counted as intermediate consumption of a nominal unit.

⁵For life insurance companies contributions received and benefits paid are not recorded.

⁶By convention the operating surplus is zero.

⁷Same value for both buyer and seller, but transfer costs are recorded as output.

⁸Supply of goods and services.

TABLE 2
OUTPUT AND TURNOVER OF ENTERPRISES IN THE FEDERAL REPUBLIC OF GERMANY IN 1982
(1,000 mill. DM)

Output (according to the input-output table)		2,715
+ Unrecorded parts of actual turnover		1,199
· Value of merchandise sold	1,063	
· Value of merchandise in transit trade	58	
· Resales of energy and water	48	
· Invoiced freight charges	29	
· Decrease in stocks of output goods	1	
· Netting out of sector-internal transactions (no estimates possible)	—	
— Output actually not marketed		325
· Own-account fixed capital formation	15	
· Increase in stocks of output goods	0	
· Own-account production for intermediate consumption	140	
· Imputed bank service charge	75	
· Imputed insurance service charge	29	
· Imputed rent of owner-occupied dwellings	60	
· Own-account production for final consumption	5	
· Compensation of employees in kind	1	
= Turnover net of value added tax ¹		3,589
+ Value added tax on products		101
= Turnover at purchasers' values		3,690

¹Transactions between agricultural holdings are not included because of a lack of statistical information.

TABLE 3
INCOME AND OUTLAY IN CASH OF HOUSEHOLDS¹ IN THE FEDERAL REPUBLIC OF GERMANY
IN 1978
(1,000 mill. DM)

Disposable income (including non-profit institutions)		823
– Disposable income of private non-profit institutions		20 ²
= Disposable income of households		803
+ Social benefits in kind ³		78
= Disposable income of households (SNA)		881
+ Receipts not recorded		76
· Benefits from life insurance companies	15	
· Gifts from other households	10 ⁴	
· Gains and prizes from lotteries etc.	3	
· Receipts from the sale of consumer durables	9 ⁴	
· Rents actually received	32 ²	
· Receipts from subletting	1 ²	
· Subsidies for housing	1 ²	
· Capital transfers received	5	
· Realized capital gains	— ⁵	
– Imputed income		227
· Employers' actual social contributions	91	
· Employers' contributions to insurance companies for the benefit of their employees	2	
· Imputed social contributions	36	
· Social benefits in kind	78	

TABLE 3 *cont.*

- Imputed income <i>cont.</i>		
· Compensation in kind	1 ²	
· Own-account production for consumption	4 ²	
· Income from housing	15	
+ Imputed transfers paid		129
· Employers' contributions	93	
· Imputed social contributions	36	
- Outlays not recorded		85
· Contributions to life insurance companies	29	
· Gifts to other households	10 ⁴	
· Payments to lotteries etc.	6	
· Transfers paid to private non-profit institutions	14 ²	
· Taxes linked to housing	2 ²	
· Interest paid in connection with housing	22 ²	
· Capital transfers paid	2	
= Net income and receipts		774
Final consumption of households		716
+ Social benefits in kind ³		78
= Final consumption of households (SNA)		794
+ Purchases of goods and services not recorded		25
· Purchases of consumer durables from other households	9 ⁴	
· Rents paid by subtenants	1 ²	
· Purchases for repair and maintenance of dwellings	16 ²	
- Imputed expenditure		145
· Insurance service charge	14	
· Services of lottery enterprises etc.	3 ²	
· Rents of owner-occupied dwellings	45	
· Social benefits in kind	78	
· Compensation in kind	1 ²	
· Own-account production for consumption	4 ²	
= Actual outlays ⁶ of households for goods and services		674

¹In German national accounts enterprises are totally excluded from the household sector.

²Rough estimate.

³In German national accounts social benefits in kind are part of government final consumption expenditure.

⁴Results of the 1978 sample survey on income and expenditure of households.

⁵No information available.

⁶Excluding purchases of land, dwellings, and financial assets.

But market transactions are mostly available on a gross basis only. A buyer pays the total price to a retail shop without being able to figure out the margin. The same holds for transit trade.

- Excellent examples of the fact that a restriction of national accounts to market transactions only is inappropriate are found in the consideration of non-market services of general government, private non-profit institutions, and households. If no output were shown for general government, it would be impossible to harmonize the use of income with the use of goods and services.
- The presentation of imputed bank service charges is necessary on the one hand to give a comparable output for banking and on the other to avoid showing a negative operating surplus for banking. Problems arise when

the use of imputed bank service charges is considered. The regulation in the SNA of counting this as intermediate consumption of a nominal unit is not satisfying. It therefore might be worth considering whether this imputation should not be dispensed with altogether. This would result in a small output and a negative operating surplus, but this “loss” would disappear after showing the distribution of property income (in this case interest).

- The treatment of insurance varies with the kind of insurance (social insurance, accident insurance, life insurance, funded or unfunded plans) and is difficult to understand. As in the case of banking, the services of insurance companies are not “sold” directly, so that imputations are necessary. For social insurance output is measured by adding up costs. For insurance companies the payments to the insured parties are subtracted from their insurance premiums to determine output in general. For life insurance companies, interest on reserves is added to premiums, and the net increase of actuarial reserves is included with their payments. These items may be compiled, but they are not visible market transactions. The actual monetary flow between life insurance companies and insured parties is not shown in SNA. Instead, an imputed purchase of services is shown, together with an increase in assets (by the amount of the net increase of actuarial reserves) of the insured parties in the capital finance accounts. These imputed transactions on the macro level are not transferable to the micro level.
- All intra-sectoral transactions in land and in existing consumer durables between households are given on a net basis. If these sales are considered as a negative fixed capital formation or negative final consumption, respectively, gross presentation would give the same result. The increase for the purchasing unit would be balanced by the decrease of the selling party. Quite a different assessment has to be made when fixed capital formation is broken down by industries and final consumption expenditure is given for groups of households. In this case—as well as in micro data sets—a gross presentation is necessary.
- For statistical reasons, intra-sectoral transfers in the general government sector as well as in the household sector are mostly netted out. On the sector as a whole this has no impact since the transfers paid and received are reduced by the same amount. The breakdown of general government into sub-sectors as well as of households into groups requires a gross presentation.
- Social benefits in kind from general government (particularly in the health care system) are often paid for by social insurance. In the SNA, however, this is included with household consumption. Logically, an imputed transfer to private households is needed, since otherwise the saving of households would be too small (by the amount of the free benefits received). In this case it is very useful to have a clear distinction between the concept of expenditure and the concept of consumption as has been suggested by J. Pêtre.⁹

⁹Petre, J. (1983).

- In national accounts, social contributions of employers paid directly to social insurance are included with compensation of employees to get their complete revenue. Focusing on actual monetary flows, it seems worth considering presenting this as a direct transaction from companies to social insurance. The same reasoning would be valid for employees' contributions to social insurance as well as income tax, since both are transferred by the companies, too. But it seems that even the transactor/transaction principle does not go that far.
- In addition, employees may have a claim to a non-contributory company pension or retirement pay which would not be included in their compensation. In these cases the SNA suggests an increase of compensation as well as a simultaneous increase of transfers paid by employees. Thus, the nominal increase in the compensation received is offset by imputed transfers from households to employers (cf. the example in Table 3). This imputation is made to obtain a comparable income for different groups of employees and to show the labour costs as a total.
- Nearly all flows of the capital finance accounts are compiled by subtracting stocks at the beginning from stocks at the end of a year. This means that net items are shown instead of actual financial transactions. However, a gross presentation of financial transactions would hardly improve the information provided by the capital finance accounts.

The above mentioned list of non-market transactions is not exhaustive. A further point is the valuation of transactions at factor values, at approximate basic values or at true basic values. Besides, capital consumption obviously is not a market transaction. This has been introduced to obtain an accrual consumption of fixed capital formation goods.

Further non-market transactions are listed below.

- Transfer costs in the case of real estate transactions are treated as output;
- The expenditure of general government on clothing and food for the armed forces is registered as compensation as well as final consumption;
- With respect to external transactions, there are many imputations, of which only one example is mentioned here: free deliveries of goods from general government to the rest of the world are reported as an imputed transfer and as exports of commodities (these goods are "bought" by the other country).

All these examples demonstrate very clearly that the items presented in the SNA differ substantially from visible market transactions. At the same time, however, it should be stressed that the quantitative difference between reported and visible market transactions is rather small. Furthermore, the examples show that a strong restriction of national accounts to visible market transactions only cannot seriously be taken into consideration. In particular, it would then not be possible:

- to give a complete picture of the economy since only a part of economic activities takes place on the market,
- to compile a complete operating surplus on an accrual basis,
- to retain comparability within the system,

- to maintain comparability of the results over time,
- to obtain international comparability.

Moreover, such restricted results could hardly be a suitable basis for analytical purposes. This rather would be a pure analysis of money flows.

3. IMPROVED PRESENTATION OF MARKET TRANSACTIONS IN NATIONAL ACCOUNTS

The main result of the above discussion on the revision of the SNA is that there should be no fundamental change in the treatment of market and non-market transactions. Nevertheless, information on the two kinds of transactions would be improved by showing them separately. This could be done by introducing new subdivisions in the accounts and/or by adding new tables or parallel accounts. The presentation of market transactions as such is important because

- national accounts can also give valid answers to questions concerning the market or money-flows;
- it will be possible to combine macro data with micro data sets or with the results of household budget surveys, enterprise statistics etc.;
- for the users of national accounts, it will be easier to understand what is shown in the accounts and how compilation is done.

Because of these important advantages, such steps should be undertaken as far as possible. At first new tables should be developed showing in detail the elements necessary for deriving the actual market transactions from the SNA transactions. This paper gives two examples of tables of this kind.

Table 2 shows the output of the enterprise sector and how market transactions, i.e. turnover, can be derived. Output is defined according to the European System (ESA). However, the recommendation in the ESA that actual market transactions between units within the same industry (branch) be consolidated is not followed in the German input-output table. Only agriculture is shown according to the concept of the "national farm," so that transactions between agricultural holdings are in principle not included.

Examples of market transactions not totally covered by the output measure are found in the net presentation of trade, transport and water and energy supply. This treatment decreases output and intermediate consumption by the same amount, so that there is no effect on value added. The same holds for own-account production for intermediate consumption (intra-firm transactions). All other items shown in Table 2 have an impact on value added. If they were not treated as part of output, the gross value added of the enterprise sector would be lower (14 per cent in the German case). According to the ESA the supply of goods and services is shown without value added tax (VAT), but the uses of these goods and services include non-deductible VAT, so that a global correction is necessary.

Table 3 shows how income and outlay in cash of the household sector can be derived from disposable income and final consumption as defined in the SNA. Social benefits in kind are health services received by households without any direct payments. In the German national accounts they are treated as part of government final consumption, so that according to SNA rules corrections are necessary. An imputed transfer to households as well as an imputed expenditure

of households has to be recorded. In German national accounts—due to a lack of statistical information—transactions between households (e.g. gifts, sales, subletting) and transfers to private non-profit institutions are netted out. The same holds (according to recommendations in the SNA) for payments between households and life insurance companies, or in connection with lotteries etc. Imputed income concerns employers' contributions to social security schemes and to insurance companies for the benefit of their employees, products provided free of charge to employees (income in kind), own-produced goods consumed by entrepreneurial households (subsistence production), and the imputed rents of owner-occupied dwellings. In the Federal Republic of Germany, as in many other countries, not only are employers' contributions directly paid over to government by the employers, but also employees' social contributions (77 bil. DM in 1978) and the income tax on wages and salaries (92 bil. DM in 1978). In Table 3 these items are treated as income "received" by employees. Another treatment is possible with regard to the actual money flows. But it is questionable whether this really makes sense.

Since the items in Table 3 concerning housing activities are rather complex, additional information should be provided. In German national accounts, housing is included totally in the enterprise sector. Consequently, it is necessary to make estimates for the household-owned part of housing. The following accounts show what the SNA assumes the household sector's bookkeeping to be, whereas Table 3 shows how households in practice can report these receipts and outlays.

Rents actually received	32
+ Rents of owner-occupied dwellings (imputed)	45
<hr/>	
= Output	77
– Intermediate consumption (incl. wages paid)	16
– Indirect taxes	2
+ Subsidies	1
– Consumption of fixed capital (imputed)	23
<hr/>	
= Operating surplus	37
+ Property income received	0
– Property income paid (interest)	22
<hr/>	
= (Entrepreneurial) income from housing (imputed)	15

In national accounts capital transfers are not reported as a part of disposable income. From this, the question arises whether the distinction between current and capital transfers is really useful.

The final consumption not covered comprises purchases from households (e.g. existing consumer durables or sublets) as well as expenditure on maintenance and repairs of dwellings, which are treated as intermediate consumption in national accounts. Imputed purchases cover goods and services actually consumed by households, which are provided either free (e.g. benefits in kind of social insurance) or without any direct payment (e.g. insurance services). Again, these examples demonstrate that it is very important to distinguish between actual expenditure and actual consumption. It should be mentioned that for the

presentation of actual consumption, additional items could be included such as individualized government final consumption expenditure, benefits in kind of companies for their employees,¹⁰ capital consumption of consumer durables,¹¹ production in households,¹² etc.

Not included in Table 3 are pure financial transactions resulting either in an accounting exchange on the asset side or in a balance sheet contraction. There is also the selling of securities where capital gains (or losses) are normally realized. This part of the receipts could be included with current income.

To show the market transactions as well as the imputations in national accounts, tables like the one above for households have to be established for each sector. Although the conceptual work on such transition tables could be solved, there still remains, due to insufficient statistical information, the problem of completing the tables with meaningful figures.

As a further step, a system of input-output tables could be envisaged which also shows pure market transactions. In the Federal Republic of Germany, such endeavours are in process.¹³

Finally, in addition to the traditional SNA presentation, parallel accounts could be developed showing market transactions only. For this system the appropriate statistical units would be institutional units, i.e. the decision-taking units. In particular, enterprises would have to be considered instead of local units, establishments or the fictitious units of homogeneous production in the ESA. This system would provide a pure analysis of money-flows. It might conceivably also correspond to the "core" proposed by van Bochove and van Tuinen.¹⁴

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¹⁰Cf. Petre, J. (1983).

¹¹Cf. Schäfer, D. (1985).

¹²Cf. Lützel, H. (1983).

¹³Cf. Stäglin, R. and Stahmer, C. (1985).

¹⁴Cf. Bochove, C. A. van and Tuinen, H. K. van (1986).