SNA 2008 concepts related to goods sent for processing and merchanting and its implications for environmental accounts

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Introduction: Reason for discussion

- 1993 SNA:ownership principle applied, but there are a few exceptions formulated:
    - to impute changes of ownership for merchanting and goods sent abroad for processing
- 2008 SNA: pure ownership principle applied, exceptions are dropped

Key question

- These recommendations regarding merchanting and goods sent abroad for processing not only have major implications for the National Accounts;

How should SEEA record physical flows in case of goods sent abroad for processing or goods subject to merchanting?

2008 SNA recommendations

- ***Goods sent abroad for processing***

  An oil refinery plant (the processor) –resident in the Dutch economic territory - converts 75 million € worth of crude oil into 100 million € worth of petrol. The crude oil is owned by a foreign parent company and shipped in from abroad. The foreign parent sells the petrol abroad. The oil refinery plant is receiving processing fees from the parent company to compensate for operational costs

According to SNA 1993		
Output of petrol	100	
Intermediate use of crude oil		75
Value added		25
Import of crude oil	75	
Exports of petrol		100
According to SNA 2008		
Output of industrial services	25	
Value added		25
Export of industrial services		25

2008 SNA recommendations

- ***Merchanting***

  A Dutch merchant buys 100 euro timber in Ghana from a Ghanese company and subsequently sells these for 120 euro to a Chinese company.

  The 1993 SNA would record only the margins of the merchanter in our case 20 euro as export of services. The 2008 SNA would record a negative export [NB not an import] of 100 euro of timber and subsequently a positive export of 120 euro of timber.

Implications for SEEA

- Objectives SEEA: A conflict?

  One of the main strengths of the SEEA are its hybrid accounts. SEEA and SNA:an integrated framework

Does not go along with….

raison d'etre of environmental accounting, which is to describe how economies interact physically with the environment as well as with other economies

Energy accounts, hybrid indicators

Industry account under the 1993 SNA	Processor	
In physical and monetary terms	mln	tj
Gross Output:	**100**	**60**
Gasoline (manufacturing)	100	60
Intermediate inputs		
Crude oil	75	80
All other goods	0	
Processing fees services	0	
All other services	0	
Value added	25	
Indicators		
Energy productivity (mln/kg)		1.3
Energy intensity (kg/mln)		3.2

Industry account under the 2008 SNA	Processor	
In physical and monetary terms	mln	tj
Gross Output:	**25**	**0**
Gasoline	0	0
Industrial services	25	
Intermediate inputs		
Crude oil	0	0
All other goods	0	
Processing fees services	0	
All other services	0	
Value added	25	
Indicators		
Energy productivity (mln/kg)		-
Energy intensity (kg/mln)		0

Energy accounts

- Hybrid indicators like energy-productivity and energy-intensity differ dramatically using the 1993 SNA or the 2008 SNA. Even though value added remains the same in both scenarios, as use of energy is reduced to 0 under the 2008 SNA recommendations, energy intensity would be 0 and energy productivity undefined.

→Indicators dependent upon legal situation and incomparable in between countries using 2008 SNA

Economy Wide Material Flow Accounts

- Considering merchanting, the consumption indicator will also be affected as export of physical entities will be added as services change to goods
- Processors (with no physical in- and outflows) still generate (air) emissions to the environment. As these emissions can not occur out of nothing they should also be omitted from the MFA. This has consequences for MFA indicators

Air emission accounts

- Attribute the emissions that occur during refining to the processor?

- Attribute emissions to the principal and not to the processor; and consequently to a foreign economy? (2008 SNA idea)

  → totally new approach for emission accounting (not Kyoto consistent, extra bridge item necessary)

  →mismatch between emissions and emission permits

Input-Output analysis

- Legal agreements influence emission-coefficients (emissions/production)
- Industries are less homogeneous (‘real’producers and producers of services)

Possible solutions:

- Split industry into a service-supplier and good-supplier
- Apply 1993 SNA set of rules for I-O analysis

Evaluation of possible solutions

How should SEEA record physical flows in case of goods sent abroad for processing or goods subject to merchanting?

- *Option 1. Record physical flows and monetary flows according to 2008 SNA*
- *Option 2A. Record physical flows according to SEEA 2003 (thus SNA 1993)*
- *Option 2B: Record physical flows on the basis of SEEA 2003(thus SNA 1993) and impute (relevant) monetary flows according to 1993 SNA principles.*

Conclusions and recommendations

- Why not choosing for option 1 and 2A?
- Option 1:

1. *Connection with physical description of economy is lost*
2. *Indicators dependent on legal situation*
3. *Material balance principle is lost*

- Option 2A

1. *Hybrid accounting is undermined*

Conclusions and recommendations

We prefer option 2B, why?

- ***We have a system designed for hybrid accounting and analysis that is internally consistent.*** Mass balancing principles are satisfied throughout and the system is fully hybrid proof. All relevant types of indicators can be derived.

- ***Physical description of economy remains intact*** Imports of processors are monitored, output and exports are monitored and intermediate use is also monitored. Using this approach, physical flows which are interesting from an economic-environmental perspective are still well monitored. From a material flow accounts point of view this is very important.

- ***Modules of the SEEA are internally consistent****.* Air emission accounts and MFA would satisfy the material balance principle when we continue to attribute the emissions to the processors based on residency. There is no need for an extra bridge item to get to Kyoto figures.

- Questions/Remarks?

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