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Issue 28

Amortization of tangible and intangible non-produced assets

**AMORTIZATION OF INTANGIBLE NON-PRODUCED ASSETS**

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## Amortisation of intangible non-produced assets – Issue 28

Meeting of the AEG, Frankfurt, January-February, 2006

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### 1. Executive summary

1.1. On 21 December 2001 the ISWGNA released a report *Treatment of Mobile Phone Licences in the National Accounts* in which it made recommendations for the treatment of mobile phone licences. In brief, the ISWGNA decided that in general there were two (linked) assets:

- the spectrum itself (a tangible non-produced asset, such as land or sub-soil assets) which belongs to the licensor; and
- a licence (an intangible non-produced) which belongs to the licensee, and which constitutes a separate asset from the spectrum itself.

1.2. As the licence approaches its termination date<sup>1</sup>, so the value of the licence to the licensee declines and the value of the spectrum to its owner increases by the same amount. But how should these flows to be recorded in the accounts? The ISWGNA decided that they should not be recorded in the current accounts but simply be recorded in the other changes in volume account. The ISWGNA recognised that this was a less than ideal solution, because in failing to record the using up of capital by the licensee it overstated its net operating surplus, net value added, net disposable income and net saving. However, it considered that the drawbacks with the alternative treatments it considered were even greater.

1.3. The Canberra II Group has revisited the issue but is unable to recommend a better solution.

### 2. Background

2.1. The ISWGNA described the reasoning leading to its decision in paragraphs 14 to 16 of the report.

*14. Under the treatment as an asset, the value of the licence is established at the time of its sale, for example by way of auction. Over time, with the expiry date moving closer, the value of the licence declines. The means of writing off the cost of a licence over the course of its life was discussed at some length by the ISGWNA. In contrast to the recording of consumption of fixed capital for produced assets, in the 1993 SNA, amortisation of non-produced assets is not recorded in the current accounts but in the other changes in asset account. As a*

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<sup>1</sup> For licences granted for an unlimited period of time, the ISWGNA recommended that the granting of the licence should be treated as the sale of the spectrum.

*licence is amortised, the value of the spectrum to the government progressively increases because the right to use it can potentially be sold again, assuming no technical change that would make its future use obsolete. The 1993 SNA recognises such reappearance of economic value and records it in the other changes in assets account. Not showing the write-off of the value in the current accounts is consistent with the treatment of other intangible non-produced assets, such as copyrights and so no change to the 1993 SNA is necessary if a decision is made to follow this route.*

*15. The ISWGNA considered two alternatives to record the annual write-downs in the accounts, namely, (a) in a way similar to the consumption of fixed capital, and (b) as other changes in assets. The meeting concluded that neither would be satisfactory for both the owner of the spectrum and the owner of the licence:*

- If the write-off is not charged to the production account, the cost of the purchase is not recorded as a cost to the businesses concerned and so their net operating surplus could be considered as overstated over a period of time.*
- If the write-off is charged to somewhere in the current account of the licence holder, then an offsetting amount has to be shown as a current receipt to the spectrum owner corresponding to the regain in value of the spectrum; otherwise “amortization” would increase although the total value of assets used in production had not changed. This adjustment would increase government saving and net lending or borrowing unless some further adjustment item is introduced into the capital account.*

*16. Therefore the ISWGNA recommended continuing the 1993 SNA treatment of restricting the write-off to the other changes in assets account. This allows the increase in the value of government assets to be recorded as the expiry date of the licence approaches, consistent with a potential further “sale” of the right to use the spectrum for another period. Further, this procedure ensures a neutral effect on the overall economy for variables such as consumption of fixed capital, saving, etc.*

### **3. Consideration of the issue by the Canberra II Group**

3.1. Francois Lequiller (2005) wrote a paper for the April 2005 meeting of the Canberra II Group that explains the issue, provides important background information about the circumstances of the ISWGNA decision and suggests avenues of investigation for the Group to pursue. At the meeting Carl Obst and Brent Moulton volunteered to write a paper exploring alternative treatments for the following meeting. In the event, a paper by Binns et al (2005) was presented at the meeting of the Group in September 2005.

3.2. The text that follows is in terms of mobile phone licences, but the analysis applies to all non-produced assets (and possibly some produced assets) that meet the six criteria set out in the ISWGNA report.

- 3.3. The paper compares four different approaches:
- a. The current treatment
  - b. The treatment proposed in the paper by Dippelsman and Mahle (IMF approach). Amortisation of the licence and the reappearance of the spectrum are recorded in new property income categories in the allocation of primary income account. Thus, net saving of the licensee is reduced and that of the licensor is increased, but value added is unaffected. Two new categories in the capital account have off-setting entries such that net lending/borrowing is unchanged.
  - c. An (unusual) financial lease approach put forward by Binns et al. In a normal financial lease arrangement the lessee is recorded as having obtained a loan from the lessor and pays principal and interest to the lessor until the liability has been eliminated, at which point legal ownership of the underlying asset is transferred to the lessee. In this particular case, the upfront payment for the licence is treated as prepaid interest that is written off over the period of the licence and represents its amortisation. For the period of the licence the licensee is treated as the economic owner of the spectrum, and at the end of the licence economic ownership reverts back to the licensor. Net saving and net lending/borrowing are affected, but net value added is not.
  - d. Another approach is put forward by Binns et al, in which the licence is amortised in the same way a fixed asset is depreciated in the production account. However, the counterpart entries for the reappearance of the spectrum are recorded in the other changes in volume account of the licensor. Net value added and net saving are affected for the licensee, but a new category in the capital account has an off-setting entry and so net lending/borrowing is unaffected.
- 3.4. An illustrative example from the paper by Binns et al is reproduced here and in the attached spreadsheet.

*Illustrative example*

3.5. Consider a licence issued over a spectrum in the last day of year 1. The value of the 30 year licence is reported at \$900m and the remaining value of the spectrum (covering the period from the end of the licence to infinity) has been estimated as \$100m. This gives a total value of the spectrum over its life of \$1000m that, excluding obsolescence and price change, should remain constant in the balance sheets over that time.

3.6. The appearance of the spectrum (\$1000m) and issuing of the licence (\$900m) are shown in the balance sheet for year 1.

3.7. In the second year the licence has been used in production and according to its expected life and some amortisation function a figure for amortisation of the licence has been calculated at \$30m per year. Because of the link between amortisation of the licence and reappearance in value of the spectrum, \$30m has to be recorded against the reappearance in value of the spectrum each year.

3.8. The amortisation of the licence (\$30m) and reappearance of the spectrum (+\$30m) has been illustrated in the transaction accounts and balance sheet for year 2 in the spreadsheet . (There are 4 worksheets to consider)

3.9. The following table lists some of the major features of the four approaches.

**Table 1 Major features of the four approaches**

<b>Approach (a)</b>	<b>Approach (b)</b>	<b>Approach (c)</b>	<b>Approach (d)</b>
Simple	Moderately, but not overly complex	Moderately, but not overly complex	Moderately, but not overly complex
Consistent with the 1993 SNA treatment of non produced assets	Extension of the SNA meaning of property income	Economic ownership of the spectrum is attributed to the licensee for the duration of the licence. May seem 'artificial' in its recording of transactions, i.e. up-front payment by licensee is prepaid interest.	The amortisation of the licence and its consequences are recorded in the current accounts of the licensee, but the re-appearance of the spectrum is recorded in the other changes in volume account of the licensor
Production account of the licensee fails to record the using up of capital, and so net value added of the licensee is overstated.	Production account of the licensee fails to record the using up of capital, and so net value added of the licensee is overstated	Production account of the licensee fails to record the using up of capital, and so net value added of the licensee is overstated	Production account of the licensee records the using up of capital, and so net value added is NOT overstated, but net value added of the economy is understated
No effect on net saving or net lending/borrowing of either the licensee or the licensor	Net saving of both the licensor and the licensee are affected, but net lending/borrowing is not	Net saving and net lending/borrowing of both licensor and the licensee are affected	Net saving of the licensee, but NOT the licensor, is affected. As a result net saving of the economy is understated. No effect on net lending/borrowing

3.10. While some members of the Canberra II Group thought that the financial lease approach had some attractions it was acknowledged that it too has its weaknesses, and it was agreed that there was insufficient time to examine this issue further. Accordingly, the Group recommended maintenance of the status quo.

#### 4. **Recommendation**

- 4.1. No change should be made to the current treatment of the amortisation of intangible non produced assets.

#### **References**

BINNS, Lauren, Carl OBST, Luke THOMPSON, Jeff TYNDALL, Paul ROMANIS (2005); “Issues in the amortisation of intangible non-produced assets”; paper presented to Canberra II Group, September 2005, Canberra II EDG and UNSD website

DIPPELSMAN, Robert J. and Nils O. MAHLE (2001); “Treatment of Mobile Phone Licenses in the National Accounts”; IMF Working Paper; IMF website

ISWGNA (2001); “Treatment of Mobile Phone Licences in the National Accounts, Report of the ISWGNA, 21 December 2001” UNSD website

LEQUILLER, Francois (2005); “Amortisation of intangible non-produced assets”; paper presented to Canberra II Group, April 2005, Canberra II EDG and UNSD website.

The 1993 SNA's Integrated Institutional Sector Accounts for Transactions (aggregated and simplified) (\$millions)

Year 1

	SNA93 Approach			IMF Approach			Financial Lease Approach			Amortisation Approach		
	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total
<b>Production Account</b>												
Output												
-Intermediate Consumption												
= Gross Value Added												
-COFC												
- <i>Amortisation of intangible non-produced assets</i>												
<b>=Net Value Added</b>												
<b>Income Account</b>												
Net Value Added												
-Compensation of Employees												
-Taxes - Subsidies on Production												
<b>=Net Operating Surplus</b>												
+Compensation of Employees												
+Taxes - Subsidies on Production												
+Property Income (Received-Paid)												
Reappearance of spectrum (IMF)												
Amortisation of licence (IMF)												
Interest received (prepayment)												
Interest paid (prepayment)												
<b>=Balance of Primary Incomes</b>												
+Current taxes on income and wealth												
+Other current transfers received												
-Other current transfers paid												
<b>=Disposable Income</b>												
-Final Consumption Expenditures												
<b>=Net Saving</b>												
<b>Capital Account</b>												
Net Saving												
-Gross Fixed Capital Formation												
+Consumption of Fixed Capital												
-Change in Inventories												
-acquisitions less disposals of valuables												
-acquisitions less disposals of non-produced non-financial assets	-900	900	0	-900	900	0				-900	900	0
-reappearance of spectrum (IMF)												
+ <i>Amortisation of intangible non-produced assets</i>												
+capital transfers receivable												
-capital transfers payable												
<b>=Net Lending/Borrowing</b>	<b>900</b>	<b>-900</b>	<b>0</b>	<b>900</b>	<b>-900</b>	<b>0</b>				<b>900</b>	<b>-900</b>	<b>0</b>
<b>Financial Account</b>												
+Net acquisition of financial assets	900	-900	0	900	-900	0				900	-900	0
reduction in prepaid interest (prepayment)												
-Net incurrence of liabilities												
reduction in unearned interest (prepayment)												
<b>=Net Lending/Borrowing</b>	<b>900</b>	<b>-900</b>	<b>0</b>	<b>900</b>	<b>-900</b>	<b>0</b>				<b>900</b>	<b>-900</b>	<b>0</b>



The 1993 SNA's Integrated Institutional Sector Balance Sheets and Changes in Balance Sheets Accounts (\$millions)

Year 1

	SNA93 Approach			IMF Approach			Financial Lease Approach			Amortisation Approach		
	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total
<b>Opening Balance Sheet</b>												
Assets												
Non-Financial Assets												
Produced Assets												
Non-Produced Assets												
Spectrum (tangible non-produced asset)												
Licence (intangible non-produced asset)												
Financial Assets												
Finance Lease Receivable (prepayment)												
Prepaid Interest (prepayment)												
- Liabilities												
Finance Lease Payable (prepayment)												
Unearned Interest (prepayment)												
<b>=Net Worth</b>												
<b>Changes in Net worth due to transactions</b>												
Produced Assets												
Gross fixed capital formation												
-Consumption of Fixed Capital												
Tangible NonProduced Assets												
Acquisition of tangible non-produced assets		900	900		900	900					900	900
-Disposal of tangible non-produced assets	-900		-900	-900		-900				-900		-900
+ Reappearance of spectrum (IMF)												
Intangible Non-Produced Assets												
Acquisition of intangible non-produced assets												
-Disposal of intangible non-produced assets												
-Amortisation of intangible non-produced assets												
Financial Assets / Liabilities, Net												
Cash	900	-900	0	900	-900	0				900	-900	0
reduction in prepaid interest (prepayment)												
reduction in unearned interest (prepayment)												
<b>=Changes in net worth due to transactions</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>				<b>0</b>	<b>0</b>	<b>0</b>
<b>Other Changes in the volume of assets account</b>												
Produced Assets												
+Non Produced assets												
Amortisation of Licence (SNA93)												
Appearance of tangible non-produced assets	1000		1000	1000		1000	1000		1000	1000		1000
Disappearance of tangible non-produced assets	-900		-900	-900		-900				-900		-900
Reappearance of Spectrum (tangible non-produced asset)												
Appearance of intangible non-produced assets	900		900	900		900				900		900
+Financial Assets												
-Changes in liabilities												
<b>=changes in net worth due to other changes</b>	<b>1000</b>		<b>1000</b>	<b>1000</b>		<b>1000</b>	<b>1000</b>		<b>1000</b>	<b>1000</b>		<b>1000</b>
<b>Closing Balance Sheet</b>												
Assets												
Non-Financial Assets												
Produced Assets												
Non-Produced Assets												
Spectrum (tangible non-produced asset)	100		100	100		100		1000		100		100
Licence (intangible non-produced asset)		900	900		900	900					900	900
Financial Assets												
Cash	900	-900	0	900	-900	0	900	-900		900	-900	0
Finance Lease Receivable (prepayment)							1000					
Prepaid Interest (prepayment)								900				
- Liabilities												
Finance Lease Payable (prepayment)								-1000				
Unearned Interest (prepayment)							-900					
<b>=Net Worth</b>	<b>1000</b>	<b>0</b>	<b>1000</b>	<b>1000</b>	<b>0</b>	<b>1000</b>	<b>1000</b>	<b>0</b>	<b>1000</b>	<b>1000</b>	<b>0</b>	<b>1000</b>

The 1993 SNA's Integrated Institutional Sector Accounts for Transactions (aggregated and simplified) (\$millions)

Year 2

	SNA93 Approach			IMF Approach			Financial Lease Approach			Amortisation Approach		
	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total
<b>Production Account</b>												
Output												
-Intermediate Consumption												
= Gross Value Added												
-COFC												
- <i>Amortisation of intangible non-produced assets</i>											30	30
<b>=Net Value Added</b>											<b>-30</b>	<b>-30</b>
<b>Income Account</b>												
Net Value Added											-30	-30
-Compensation of Employees												
-Taxes - Subsidies on Production												
<b>=Net Operating Surplus</b>											<b>-30</b>	<b>-30</b>
+Compensation of Employees												
+Taxes - Subsidies on Production												
+Property Income (Received-Paid)												
Reappearance of spectrum (IMF)				30		30						
Amortisation of licence (IMF)					-30	-30						
Interest received (prepayment)							30			30		
Interest paid (prepayment)								-30		-30		
<b>=Balance of Primary Incomes</b>											<b>-30</b>	<b>-30</b>
+Current taxes on income and wealth												
+Other current transfers received												
-Other current transfers paid												
<b>=Disposable Income</b>											<b>-30</b>	<b>-30</b>
-Final Consumption Expenditures												
<b>=Net Saving</b>				<b>30</b>	<b>-30</b>	<b>0</b>	<b>30</b>	<b>-30</b>	<b>0</b>		<b>-30</b>	<b>-30</b>
<b>Capital Account</b>												
Net Saving				30	-30	0	30	-30	0		-30	-30
-Gross Fixed Capital Formation												
+Consumption of Fixed Capital												
-Change in Inventories												
-acquisitions less disposals of valuables												
-acquisitions less disposals of non-produced non-financial assets												
-reappearance of spectrum (IMF)				-30		-30						
<b>+Amortisation of intangible non-produced assets</b>					30	30					30	30
+capital transfers receivable												
-capital transfers payable												
<b>=Net Lending/Borrowing</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>-30</b>	<b>0</b>		<b>0</b>	<b>0</b>
<b>Financial Account</b>												
+Net acquisition of financial assets												
reduction in prepaid interest (prepayment)											-30	
-Net incurrence of liabilities												
reduction in unearned interest (prepayment)							30					
<b>=Net Lending/Borrowing</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>-30</b>	<b>0</b>		<b>0</b>	<b>0</b>

The 1993 SNA's Integrated Institutional Sector Balance Sheets and Changes in Balance Sheets Accounts (\$millions)

Year 2

	SNA93 Approach			IMF Approach			Financial Lease Approach			Amortisation Approach		
	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total	Govt	Business	Total
<b>Opening Balance Sheet</b>												
Assets												
Non-Financial Assets												
Produced Assets												
Non-Produced Assets												
<i>Spectrum (tangible non-produced asset)</i>	100		100	100		100		1000		100		100
<i>Licence (intangible non-produced asset)</i>		900	900		900	900					900	900
Financial Assets												
<i>Cash</i>	900	-900	0	900	-900	0	900	-900	0	900	-900	0
Finance Lease Receivable (prepayment)							1000					
Prepaid Interest (prepayment)								900				
- Liabilities												
Finance Lease Payable (prepayment)								-1000				
Unearned Interest (prepayment)							-900					
<b>=Net Worth</b>	<b>1000</b>	<b>0</b>	<b>1000</b>	<b>1000</b>	<b>0</b>	<b>1000</b>	<b>1000</b>	<b>0</b>	<b>1000</b>	<b>1000</b>	<b>0</b>	<b>1000</b>
<b>Changes in Net worth due to transactions</b>												
Produced Assets												
Gross fixed capital formation												
-Consumption of Fixed Capital												
Tangible NonProduced Assets												
Acquisition of tangible non-produced assets												
-Disposal of tangible non-produced assets												
+ Reappearance of spectrum (IMF)				30								
Intangible Non-Produced Assets												
Acquisition of intangible non-produced assets												
-Disposal of intangible non-produced assets												
- <i>Amortisation of intangible non-produced assets</i>					-30						-30	-30
Financial Assets / Liabilities, Net												
reduction in prepaid interest (prepayment)								-30				
reduction in unearned interest (prepayment)							30					
<b>=Changes in net worth due to transactions</b>				<b>30</b>	<b>-30</b>	<b>0</b>	<b>30</b>	<b>-30</b>	<b>0</b>		<b>-30</b>	<b>-30</b>
<b>Other Changes in the volume of assets account</b>												
Produced Assets												
+Non Produced assets												
Amortisation of Licence (SNA93)		-30	-30									
<i>Reappearance of Spectrum (tangible non-produced asset)</i>	30		30							30		30
+Financial Assets												
-Changes in liabilities												
<b>=changes in net worth due to other changes</b>	<b>30</b>	<b>-30</b>	<b>0</b>							<b>30</b>		<b>30</b>
<b>Closing Balance Sheet</b>												
Assets												
Non-Financial Assets												
Produced Assets												
Non-Produced Assets												
<i>Spectrum (tangible non-produced asset)</i>	130		130	130		130		1000	1000	130		130
<i>Licence (intangible non-produced asset)</i>		870	870		870	870					870	870
Financial Assets												
<i>Cash</i>	900	-900	0	900	-900	0	900	-900	0	900	-900	0
Finance Lease Receivable (prepayment)							1000		1000			
Prepaid Interest (prepayment)								870	870			
- Liabilities												
Finance Lease Payable (prepayment)								-1000	-1000			
Unearned Interest (prepayment)							-870		-870			
<b>=Net Worth</b>	<b>1030</b>	<b>-30</b>	<b>1000</b>	<b>1030</b>	<b>-30</b>	<b>1000</b>	<b>1030</b>	<b>-30</b>	<b>1000</b>	<b>1030</b>	<b>-30</b>	<b>1000</b>