NATIONAL EURO
CHANGEOVER COMMITTEE

Guidelines on the rounding and smoothing of Maltese lira amounts converted into euro.

Guideline: NECC/0004/06

Version 1.0
24ᵗʰ February 2006

1. Objective

These guidelines set overall principles and direction on rounding and smoothing of monetary amounts to be paid or accounted for, converted from Maltese liri into euro.

2. Applicability

Rules for conversion would be required where monetary amounts are set in Maltese lira. Rounding rules in connection with conversions of national currencies into euro are found in EC Regulation 1103/97[1]. Such rules are an integral part of the monetary law of the euro area of which Malta shall form part upon euro adoption.

They apply to conversions of monetary amounts "*to be paid or accounted for*". Computations which precede the establishment of a monetary amount are outside the scope of these guidelines. The rounding of such operations depends on the terms of the contractual relationship, the applicable law, usage, practice or convention. These rounding guidelines do not cover items such as the calculation of interests or fees, etc.

Legal, operational or presentational requirements[2] might necessitate smoothing euro amounts converted from Maltese lira to convenient round figures (e.g. €1, €10, €4000, etc.). All Governmental organisations (including utilities and public sector) are expected to apply fair and consistent treatment of such amounts. Business organisations could also need to apply smoothing if they use groups of monetary amounts to make listings, rankings, reporting, etc.

All governmental, business, non-profit organisations and body corporates are therefore expected to follow these directions when applying rounding and smoothing during the conversion of monetary amounts from Maltese liri into euro.

3. Principle(s)

These guidelines are based upon the principles of transparency, legal equivalence and fairness where conversion of monetary amounts from Maltese liri (Lm) into euro necessitates the applicability of rounding and smoothing.

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[1] Council Regulation (EC) number 1103/97 of 17 June 1997 on certain provisions relating to the introduction of the euro, recitals 10, 11 and 12 and Articles 4 and 5 refer to rounding rules.

[2] The direct conversion of thresholds or tables referring to monetary amounts may lead to inconsistencies. Such inconsistencies are not limited to tables in legislative provisions, acts, legal notices or regulations in subsidiary legislation e.g. brackets in law for fines.

4. Guidelines

4.1 Rounding differences and level of accuracy

4.1.1   The irrevocably fixed conversion rate shall be adopted in terms of Maltese liri with six significant figures, e.g. 1 euro = Lm0.429300[3] (Article 4 (1) of EC Regulation 1103/97). The irrevocably fixed conversion rate shall **not** be rounded or truncated when making conversions.   Therefore, calculations with 0.4, 0.43, 0.429, etc. are not permitted (Article 4 (2) of EC Regulation 1103/97).

4.1.2   Only the irrevocably fixed conversion rate shall be used for calculations. Inverse rates (e.g. 2.32937) **cannot** be used (Article 4 (1) of EC Regulation 1103/97) since these might lead to inaccuracies in conversion of the original amount.

4.1.3   Amounts converted to euro have to be rounded up or down to the nearest (euro) cent. In all cases the amount shall be rounded up if the application of the conversion rate gives a result which is exactly half-way (0.005 or 0.5 (euro) cent); e.g. 0.005 is rounded to 0.01.

Example 1: To convert Lm 154.50 into euro,

> In this example, the irrevocably fixed conversion rate is taken to be €1= Lm0.429300.
> Note that the irrevocably fixed exchange rate is not truncated in the operation below.
>
> To convert from Lm 154.50 to euro, a dividing operation must be performed; i.e.
> Lm154.50 / 0.429300 = €359.88**8**19.
>
> The result when rounding to the nearest cent is €359.89.
>
> Note that since the third decimal is higher than 5, the converted value has been rounded up.

Example 2: To convert Lm 7.26 into euro,

> In this example, the irrevocably fixed conversion rate is taken to be €1= Lm0.429300.
> Note that the irrevocably fixed exchange rate is not truncated in the operation below.
>
> To convert from Lm 7.26 to euro, a dividing operation must be performed; i.e.
> Lm7.26 / 0.429300 = €16.91**1**25087.
>
> The result when rounding to the nearest cent is €16.91.
>
> Note that since the third decimal is lower than 5, the converted value has been rounded down.

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[3] This is the central parity rate fixed on 2nd May 2005 on Malta's entry in ERM II. The irrevocably fixed conversion rate would be fixed when the derogation is abrogated.

Example 3: To convert Lm 58.194 into euro,

In this example, the irrevocably fixed conversion rate is taken to be €1= Lm0.429300. Note that the irrevocably fixed exchange rate is not truncated in the operation below.

To convert from Lm 58.194 to euro, a dividing operation must be performed; i.e. Lm58.194/ 0.429300   = €135.5555

The result when rounding to the nearest cent is €135.56

Note that since the third decimal is equal to 5, the converted value has been rounded up.

4.1.4   Rounding differences may arise between the sum of a string of converted amounts and the result that would be obtained by converting each of the original amounts. In most cases it is appropriate to consider **the total amount** for the conversion into euro. Similarly, a string of computations in Lm should only be rounded at the point where a sum "**to be paid**" or **"accepted"** is arrived at. The total of a series of amounts displayed in Lm and euro will virtually never match the conversion of the total of the original individual amounts:

Example 4: conversion rate: €1 =Lm 0.429300

	Lm	€
Item 1	10.00	23.29
Item 2	12.40	28.88
Item 3	25.00	58.23
Item 4	32.45	75.59
Sum	79.85	185.99

Conversion of the total amount of Lm79.85 at the conversion rate used in the above example would, however, result in €186.00, a difference of one (euro) cent. The rounding difference may increase as the number of amounts to be converted increases.

4.1.5   It is recommended that, unless there are operational requirements, the reckonable amount of a transaction should be the converted and rounded total sum of the components rather than the sum of individually converted and rounded components. Taking Example 4, the transaction total should be €186.00 (conversion of the sum of Lm 79.85) rather than the sum of the rounded and converted individual items (i.e. Items 1 – 4).

4.1.6   In general, all prices converted from Lm into euro will have to be rounded to the nearest (euro) cent. However, there are instances when prices were originally set and/or displayed with a higher level of accuracy in Lm. In such cases, a similar level of accuracy will have to be used when the prices are displayed and applied in euro. The best example would be fuel prices (one litre of fuel is equal to say Lm0.466) that are

quoted to three decimal places. In this case, applying the assumed irrevocably fixed conversion rate of Lm 0.429300, the price of one litre of petrol would need to be translated to €1.085 (Lm0.466 divided by 0.429300 = €1.0854880 which is rounded to €1.085).

4.2 Smoothing

4.2.1. There is no official guidance at European level on smoothing of euro amounts and thresholds. However, to set an example and to reduce inflationary pressures that could be identified with the adoption of the euro as much as possible, any smoothing of converted euro amounts by Government (including its agencies and the public sector[4]) should be in favour of the consumer.

4.2.2. Smoothing for presentational reasons should be avoided unless it is required to provide consumer convenience in pricing.

4.2.3. The smoothed results of amounts of a similar type should, as far as possible, be consistent across all Government organisations.

4.2.4. Government organisations should ensure that citizens with whom they deal with are provided with adequate, targeted and easily understood information on any smoothing of monetary amounts. In the operation of this principle, the needs of vulnerable groups should be taken into account.

4.2.5. With respect to thresholds, the application of the conversion rate and rounding rules may lead to inconsistencies between neighbouring brackets or may no longer distinctively delimit the bracket in a threshold.

Example 5: conversion rate: 1 euro = Lm 0.429300

Example of tax bands rounded to the nearest (euro) cent		
Lm 0 – 3100	Lm 3101 – 4100	Lm 4101 – 5000
€ 0.00 - €7221.06	€ 7223.39 - € 9550.43	€9552.76 - €11646.87

In the example above, it is evident that if the brackets are left as shown a person earning €9551 will not be covered since a gap of about €2.33 is created due to the use of whole Maltese Lira amounts before the conversion. These would need to be smoothed to ensure continuity and consistency in threshold levels.

4.2.6. The smoothing of monetary amounts contained in legislative provisions (tax brackets, fees, allowances, fines etc.) would, therefore, have to include the conversion of the existing Maltese lira amounts with the application of the rounding rules.

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[4] Including utility prices, fees, licences, fines, etc.

Example 6: conversion rate: €1 = Lm 0.429300

Payment of fine (multa)			
Between	Lm 100	and	Lm 1000
converted into euro	€232.93		€2329.37

The fines would be smoothened from say €235 to €2325 without contravening the original (unconverted) Lm limits. This is not smoothing against the interests of the accused but the imposition of a fine within the unconverted limits.

4.2.7. For better regulation, where fines or penalties need to be smoothened, the smoothing for their amounts that carry the same value should be consistent across all Government organisations.

5. Definitions

Derogation – the temporary exemption for a Member State agreed in the Treaty of Accession with respect to the application of some articles of the chapters on economic and monetary policy in the Treaty establishing the EC.

€-day – the date when Malta enters the euro area, i.e. the euro becomes legal tender in Malta.

Irrevocably fixed conversion rate – the unalterable and irrevocably fixed exchange rate between the national currency of the Member State and the euro determined on the abrogation of the derogation for that Member State.

Monetary amounts – all forms of cash based monetary obligations and amounts to be accounted for, like amounts at which tangible assets are valued, amounts in legislative provisions, sales offers.

Rounding – part of the process of converting a legacy currency unit into euro that expresses the converted number as a round number. e.g. €11.357 rounded off to 2 decimal places becomes €11.36.

Rounding rules – precise legal rules governing the conversion of a legacy currency units into euro so as to guarantee clarity and fairness. Each conversion rate to one euro is expressed as six significant figures and these six figures should always be used when making conversions. They cannot be rounded or shortened. If,

after conversion into euro, the number at the third decimal place is less than 5, then the euro figure must be rounded down e.g. €34.874 becomes €34.87. If the third decimal number is five or above, then it can be rounded up e.g. €34.875 becomes €34.88.

Smoothing   –   the process of changing an awkward number after euro conversion to a more acceptable or memorable one, e.g. €10 instead of €10.02.