Deaths

chapter 7

Section 7.1 explains the suggested methodology for the identification of enterprise deaths. Like enterprise births, enterprise deaths include the population of all active enterprises irrespective of employment thresholds. In addition to enterprise deaths, exits by decline may occur in data collections using an employee threshold. These are explained in section 7.2 on employer enterprise deaths and economic enterprise deaths.

Like the various definitions of births, the following populations of deaths can be distinguished:

Enterprise deaths (population **D**): Enterprise deaths covering all enterprises, regardless of whether they are employers or not. No general threshold is applied to the size of the enterprise in terms of employment or any other characteristics.

Employer enterprise deaths (population D_1): Deaths of enterprises with at least one employee. This population consists of enterprise deaths (population D) that had at least one employee in the year of death, and of enterprises that move below the threshold of one employee for at least two years.

Economic enterprise deaths (population D_2): Deaths of enterprises with at least two employees. This population consists of enterprise deaths (population D) that had at least two employees in the year of death, and of enterprises that move below the threshold of two employees for at least two years.

Again like births, the same unit may be recorded as a death in more than one of these populations. For instance, an enterprise may move below the threshold of two employees in a given year, below the threshold of 1 employee in the following year, and then cease its activity permanently in the next year. In this case, it would be counted as a death in populations D_2xx, D_1xx+1 and Dxx+2. An enterprise death with two or more employees in the year of death will be counted in all three populations in the same year, i.e. Dxx, D_1xx and D_2xx.

7.1   From enterprise closures to enterprise deaths (population D)

Enterprise deaths

For the sake of consistency, and in line with user needs, the method of comparing populations of active enterprises used for the production of data for enterprise births should also be followed for enterprise deaths. This will also help to gain from synergies in processing.

The Commission Regulation No 2700/98 defines enterprise deaths as follows:

"A count of the number of deaths of enterprises registered to the population concerned in the business register corrected for errors. A death amounts to the dissolution of a combination of production factors with the restriction that no other enterprises are involved in the event. Deaths do not include exits from the population due to mergers, take-overs, break-ups and restructuring of a set of enterprises. It does not include exits from a sub-population resulting only from a change of activity."

Events leading to a closure of an enterprise, but which should be excluded from the statistics on enterprise deaths are:

1.   Enterprises that close down due to merging or breaking-up of production factors (break-ups, mergers, restructuring)

2.   Enterprises whose activity is taken over by another enterprise (take-over)

3.   Enterprises that are deleted due to a change of legal form, e.g. a successful sole proprietor moving operations from his home to another location and at the same time changing the legal form of the enterprise to a limited liability company is a case that should be excluded.

4.   Reactivated enterprises if they restart activity within 2 calendar years.

For many enterprises there is no direct way to determine death, and information on the date of cessation may not be forthcoming from an administrative source or may reflect only administrative death. Hence, the decision that an enterprise has ceased to exist or has become permanently inactive will have to be made by combining information from different sources.

Identifying deaths

Populations of active enterprises are compared in order to identify the potential population of enterprise deaths. ID numbers of enterprises that were active during at least part of year xx are matched with the ID numbers of enterprises active in years xx+1 and xx+2. The matching process should result in two sets of enterprise records:

1. Enterprises active in xx and not active in xx+1 or xx+2 (= enterprise closures = potential enterprise deaths in year xx, to be investigated further)

2. All other enterprises.

■ Step 1: Population of active enterprises = Nxx

The population of active enterprises should be identified using the definition given in chapter 3.

For further steps in the procedure it is necessary to produce also populations N(xx+1) and N(xx+2).

■ Step 2: Cessations in year xx

The cessations in year xx are a subset of the population of active enterprises in year xx, which have ceased their economic activity between 01.01 and 31.12. They can be identified by comparing the population of active enterprises in year xx with the population of active enterprises in year xx+1. Cessations are identified as enterprises that are only present in year xx.

Again, the basis of the method to be used is the concept of population of active enterprises. The date of deregistration should not be used as the primary means of identifying cessations as information on the date of commencement and cessation of activity is not available for all enterprises and all Member States, and such dates may represent administrative rather than statistical events.

■ Step 3: Elimination of reactivations

As in step 3 of the identification of enterprise births, cessations should be checked for reactivation in the following two calendar years, because enterprises dormant for less than two years are considered reactivations and therefore not deaths followed by a birth. An enterprise death occurs only if the unit has been inactive for at least two years.

The way to identify reactivations as suggested in step 3 of the chapter enterprise births, applies equally to the context of enterprise deaths, i.e. if a new enterprise in year xx+2 is identified as a reactivation, then the enterprise is not considered an enterprise death in year xx.

■ Step 4: elimination of other cessations

In order to find the events that were not real enterprise deaths, but rather cessations due to events like break-ups, mergers or take-overs, a matching of criteria (as for enterprise births) should be carried out. The pairwise matching is used in the same way to identify the cases where another unit is involved in the cessation of the enterprise. As for enterprise births, the matching should consider name, location and economic activity (on the most detailed level of address and 4-digit level of ISIC). For this purpose, the population of active enterprises should cover all sections of ISIC Rev. 4, including sections A and O. Some manual checking will have to be done, mostly on near matches by name. Possible multiple matches should be treated the same way for deaths as for births.

The last automated check should be for links between legal units. If a link is found, this is a strong indicator for other cessation than death. As with births, other nationally available information should also be used where appropriate, and manual checks of all large cessations (i.e. 20 or more employees) should also be carried out, though again a sample may be used if the numbers are too high (see step 5 in chapter 5.1).

7.2   Employer enterprise deaths and economic deaths

The main component of the data on employer and economic enterprise deaths already exists in the population of all enterprise deaths (population D). The enterprise deaths except the units below the respective employee thresholds cover largely the population of employer and economic enterprise deaths. However, there are also enterprises that move below the threshold of one or two employees but that continue activity below this threshold. These should be considered employer enterprise deaths, or economic enterprise deaths respectively. These enterprises may well be counted again as enterprise deaths (according to chapter 7.1) when they cease all economic activity. "Exits by decline" are not covered in the methodology on enterprise deaths described in section 7.1 and will be described in this section. The time perspective has to be opposite to the one used for "entry by growth". As was shown in chapter 5.2, entries by growth are identified by looking at the units that were active but below the respective employee threshold in the two years *before* the year in question (xx-1 and xx-2). "Exits by decline" will have to be identified by looking at the units that dropped below the employee threshold in the two years *after* the year in question.

7.2.1 Employer enterprise deaths (population D_1)

There are two conditions which qualify an enterprise as an employer death:

1.   It was an enterprise death (see section 7.1) in year xx, and had at least one employee in the year of death, or

2.   It had at least one employee in year xx, continued activity but was not an employer for the two following years (exit by decline). The decline in employment should not be due to a split-off.

The suggested step-by-step method for identifying employer enterprise deaths (population D_1xx) is as follows:

■ Step 1: Enterprises with employees in the year of death

Enterprise deaths (population Dxx) excluding those without employees should be used to establish the population of enterprises with at least one employee in the year of their death.

■ Step 2: Identifying former employers that become non-employers in xx (exits by decline)

In addition to deaths with at least one employee, we have to identify those enterprises that had at least one employee in xx and continued to exist afterwards without employees. To make sure that no reactivations within two years are included (these should not be considered as deaths), we have to check whether these units had no employees in years xx+1 *and* xx+2. The populations of "active non-employer enterprises" will be called N(0)xx+1 and N(0)xx+2.

■ Step 2a: Identifying non-employers in years xx+1 and xx+2

To cover all the units that might be exits by decline, the following cases should be considered, and the populations of active non-employer enterprises N(0)xx+1 and N(0)xx+2 should first be established.

1)   A unit is in population N(0)xx+1 and N(0)xx+2. => It was a non-employer in both years.

2)   A unit is in population N(0)xx+1, but not in N(0)xx+2.

    If the unit is in population N_1xx+2 (Nxx+2 excluding N(0)xx+2), it was an employer in xx+2 and should be ruled out.

    If the unit is not in population N_1xx+2 either, it was dormant in xx+2 and possibly a death. => It was a non-employer in both years.

3)   A unit is in population N(0)xx+2, but not in N(0)xx+1.

    If the unit is in population N_1xx+1 (Nxx+1 excluding N(0)xx+1), it was an employer in xx+1 and should be ruled out.

If the unit is not in population N_1xx+1 either, it was dormant in xx+1. => It was a non-employer in both years.

In summary, the enterprises to be identified in step 2a are those which are

- in population $N(0)xx+1$ *or* $N(0)xx+2$ *or* both

- *and* which are *neither* in population N_1xx+1 *nor* in N_1xx+2

Step 2b: Checking whether non-employers in xx+1 and xx+2 had employees in xx

We have to check whether units identified by these cases in step 2a had ≥ 1 employee in year xx. If so, they are employer deaths in year xx.

Step 2c: Removing enterprises that shrunk by split-off (optional step)

Results on split-offs should be available from the methodology used to identify enterprise births (see section 5.1). Where possible, the information on new enterprises that were split-offs (and therefore no real enterprise births) should be used to identify original enterprises that moved below the one employee threshold because a new unit emerged from a split-off. These original enterprises should be removed from the population of exits by decline.

Step 3: Adding up the results

Adding up units identified in steps 1 and 2 yields the population of employer enterprise deaths D_1xx.

7.2.2 Economic enterprise deaths (population D_2)

There are again two conditions which qualify an enterprise as an economic death:

1. It was an enterprise death in year xx, and had at least two employees in the year of death, or

2. It had at least two employees in year xx, continued activity but had less than two employees for the two following years (exit by decline). The decline in employment should not be due to a split-off.

The methodology for identifying economic deaths follows from the method used for employer deaths:

Step 1: Enterprises with two or more employees in the year of death

Enterprise deaths (population Dxx), excluding units with less than two employees, should be used to establish the population of enterprises with at least two employees in the year of their death. Using the same methodology as for the current harmonised data collection ensures that only real deaths are counted, but not cessations of units due to merger or take-over

Step 2: Identifying former employers with two or more employees (exits by decline)

In addition to deaths with at least two employees, we have to identify enterprises that had at least two employees in xx and continued to exist afterwards with less than two employees.

Step 2a: Identifying enterprises with less than two employees in years xx+1 and xx+2

To cover all the units that might be exits by decline, the populations of active non-employer enterprises $N(0,1)xx+1$ and $N(0,1)xx+2$ should first be established. Then the following cases have to be considered.

1) A unit is in population N(0,1)xx+1 and N(0,1)xx+2. => It was active and below the employee threshold in both years.

2) A unit is in population N(0,1)xx+1, but not in N(0,1)xx+2.

> If the unit is in population N_2xx+2 (Nxx+2 excluding N(0,1)xx+2), it had at least two employees in xx+2 and should be ruled out.

> If the unit is not in population N_2xx+2 either, it was dormant in xx+2, and possibly a death. => It was below the employee threshold in both years.

3) A unit is in population N(0,1)xx+2, but not in N(0,1)xx+1.

> If the unit is in population N_2xx+1 (Nxx+1 excluding N(0,1)xx+1), it had at least two employees in xx+1 and should be ruled out.

> If the unit is not in population N_2xx+1 either, it was dormant in xx+1. => It was below the employee threshold in both years.

In summary, the enterprises to be identified in step 2a are those which are

- in population N(0,1)xx+1 *or* N(0,1)xx+2 *or* both

- *and* which are *neither* in population N_2xx+1 *nor* in N_2xx+2

■ Step 2b: Checking whether units with less than two employees in xx+1 and xx+2 had two or more employees in xx

We have to check whether units identified by these cases in step 2a had ≥ 2 employees in year xx. If so, they are economic deaths in year xx.

■ Step 2c: Removing enterprises that shrunk by split-off (optional step)

Where possible, enterprises that moved below the two employee threshold because a new unit emerged from a split-off should be removed from the population of exits by decline.

■ Step 3: Adding up the results

Adding up the units identified in steps 1 and 2 yields the population of economic enterprise deaths D_2xx.

7.3 Units in liquidation

Information from administrative sources may indicate that a unit is in liquidation, and that the remaining activity is related to this process itself, e.g. turnover from the sale of production factors, or employment due to administrative matters. Although this turnover or employment is not related to the enterprise's genuine activity, it is recommended to consider the enterprise alive until it ceases this activity. As it cannot always be identified whether activity is related only to the liquidation process or not, and as the availability of administrative information varies across countries, the benefit of this approach is that results are comparable.

7.4 Provisional data on deaths

The check for reactivation within two years leads to a time lag of one year of the data availability compared with the data on the population of active enterprises and enterprise births. In order to improve the timeliness of the data on enterprise

deaths, provisional results in year t+2 should be estimated using the best national methods available. As examples, the following methods or a combination of both could be used:

1) If data collections have already been conducted, the known ratio between enterprise deaths and either reactivations or the total number of cessations from previous reference years can be used to estimate the number of enterprise deaths based on the available number of cessations. This may however not be possible at a detailed level.

2) Based on the information that is available on reactivations during the year t+2, during which results are prepared, preliminary data on the enterprise deaths excluding the known reactivations can be produced. This will however lead to an overestimation of enterprise deaths, as reactivations occurring later in the year t+2 are not taken into account or estimated.

7.5 Impact of deaths

As well as indicators on the number of deaths, there is a demand for data on the impact of these deaths. This can only partly be satisfied by studying deaths by size-band, therefore more accurate measures are needed. The impact can be measured both in terms of the effect on the labour market, i.e. the amount of employment lost, or the effect on the economy in financial terms, i.e. the amount of turnover lost.

Employment

It is clear that the employment lost when an enterprise death occurs is of interest to policy makers. What is less clear is the time at which that employment should be recorded. Few enterprises suddenly change from being fully active to being dead, most go through a period of contraction lasting months, or possibly even years. This means that if employment is measured at the exact moment of death, the impact of the loss of that enterprise could be under-stated.

Conversely, if employment is measured over a period prior to death, e.g. the year before the death occurred, there is the problem of how to deal with relatively short-lived enterprises, i.e. those that only survive for a few months. These enterprises may not have had any activity or employment in the previous period.

This problem is eased to some extent by the use of average employment over the period during which the enterprise was active. If infra-annual employment data are available, the decline in employment immediately before death will be somewhat masked by using an average figure, particularly if the death occurs towards the end of the period. It should be noted, however, that although this may reduce the problem, it is unlikely to solve it entirely.

Another scenario is that only one observation is available for a given period. This is particularly likely for smaller enterprises. In this case it is obviously not possible to take an average, but the observation may, in many cases, reflect the position several months before the death, so may not be affected by the period of pre-death decline.

Initial research in two EU Member States has shown that the employment figure for the period in which the death occurs is not significantly different to that for previous periods. If this research is validated by other Member States, the conclusion is likely to be that employment relating to the period of the death is suitable for an indicator on the impact of enterprise deaths.

7.6 Indicators

The following indicator related to deaths may be produced:

■ Number of deaths as a percentage of the population of active enterprises.

■ Correlations of deaths with GDP and unemployment

It is also proposed to add the following two indicators on the impact of deaths in terms of employment loss. These will be tested, and if successful, may be implemented in future data collections.

- Persons employed in enterprises that die in year xx as a proportion of the total number of persons employed in the population of active enterprises in year xx (both in head counts)

- Mean employment loss per death, measured in terms of persons employed (head count)