

Annual Indicators, a New Class of Labour Market Indicators

*Indicatori Annuali, una Nuova Classe di Indicatori
per Il Mercato del Lavoro*

Riccardo Gatto

Istat, servizio Formazione e Lavoro, riccardo.gatto@istat.it

Pietro Gennari

UNESCAP, Adviser on Economic Statistics, gennari@un.org

Riassunto: Gli indicatori statistici tradizionali sul mercato del lavoro hanno un orizzonte temporale quasi istantaneo, per esempio la definizione di occupato prevede un periodo di riferimento pari a una settimana. Alcuni aspetti del mercato del lavoro legati al tempo e alla durata, come il concetto di mobilità, restano in questo modo nascosti. Una nuova classe di indicatori statistici per il mercato del lavoro, con un periodo di riferimento pari all'anno, viene proposta in questo lavoro per misurare tali aspetti. Pregio di tali indicatori è la similarità con gli indicatori tradizionali, che ne rende l'utilizzo particolarmente intuitivo e consente di estrarre informazione anche da un eventuale confronto con gli indicatori tradizionali stessi.

Keywords: Labour force survey, Annual Rates, Average Rates.

1. Indicators With a Long Reference Period

Traditional labour market indicators, such as the numbers of employed or unemployed people and the employment or the unemployment rates, are based on an observation (reference) period as shorter as possible. They are designed in order to define an instantaneous condition. The reference period for the definition of employment (the period during which it is required to have worked at least once in order for an individual to be considered employed) is then one single week. This approach does not offer good information about the features of the labour market that are related with time, duration or tenure. Important aspects such as mobility inside the labour market or participation to the labour market are linked with time, duration and tenure.

For instance let A and B be two markets in which the total number of employed and unemployed people is the same. Still A is in an economy in which who is employed tends to remain employed in the long run and who is unemployed tends to remain unemployed in the long run, this is a typical situation of a low mobility market. On the contrary in B all the active people experience a short period of employment and they rotate in the available job positions. This is a situation of high mobility market, completely different from the A kind, mainly from the supply side point of view.

Traditional indicators are not able to catch the difference between A and B: the numbers of employed and unemployed people and the employment and the unemployment rates are the same in A and B all along the time. Also the average numbers and rates over the

year, that are the traditional indicators referred to a one year period, will show the same figures as the instantaneous indicators.

The International Labour Organisation (ILO) refers to this problem (Husmanns, Mehran e Verma, 1990) when distinguishes between the “currently active population” (measured by standard indicators) and the “usually active population” for which proposes a survey that follows the individuals in the long run. Those two aggregates show similar figures in presence of a market of the A kind and they diverge moving to a B kind market.

In this work a new class of Labour market indicators is proposed: the annual indicators. Using the longitudinal dimension of the Labour Force Survey (LFS), run by Istat and main source for labour market quantitative information, they follow the individuals over a period of one year and do not require further expenses for a new survey. Another advantage is that, using the same information source, they are fully consistent with the traditional indicators from the definitions to the reference population.

Price to pay is the low frequency of the observation: along one year every individual in the sample is interviewed only three times, losing changes of higher frequency.

2. Annual Indicators

One quarter of the LFS sample of the first quarter (Q-I) of the year is interviewed again in the Q-II and then again in the Q-I of the next year. Another quarter of the same sample is interviewed at the Q-III of the year and again at Q-I of the next year. It is possible then to follow half of the sample for one year long. Until the old LFS had last (the old LFS lasted, and the new LFS started, at the 2004-Q-I) the Istat was offering linked databases in order to calculate flow indicators and transition matrices. The Istat is running a project with the purpose to start again with the distribution of linked databases as soon as possible. Available databases are linked over one year and over three months period. The Istat linkage procedure is probabilistic. In order to obtain a three quarter linked database, two Istat linked databases with a common quarter are chosen and linked on the pivot quarter. As instance to obtain the 2002-Q-I + 2002-Q-II + 2003-Q-I database the 2002-Q-I + 2002-Q-II and the 2002-Q-I + 2003-Q-I have been chosen and deterministically linked on the data from the 2002-Q-I survey. The full annual database is then obtained merging the 2002-Q-I + 2002-Q-II + 2003-Q-I and the 2002-Q-I + 2002-Q-III + 2003-Q-I one.

To build the simplest annual indicator a new variable, *PATH*, is calculated by the succession of three work statuses experienced by the individual. To start it is possible to consider three statuses: employed (O), unemployed (D) and inactive (N), obtaining 27 different items for the *PATH* variable. Further detail can arise distinguishing, among those that have registered {O,O,O}, the ones that show same sector of economic activity and profession from the ones that changed sector or/and profession.

The final 28 items are too many to make *PATH* directly useful, but several aggregations are possible and significant, creating new variables.

Some examples can be given (a convention is followed: {brackets} are for ordered statuses while [brackets] are for not ordered statuses).

The variable *Annual Prevalent Status* register the prevalent status over the year of an individual, items can be:

- Stable Employed [O,O,O] with same sector and profession

- Changing Employed [O,O,O] with different sector or/and profession
- Prevalently Employed [O,O,D] or [O,O,N]
- Stable Unemployed [D,D,D]
- Prevalently Unemployed [D,D,O] or [D,D,N]
- Stable Inactive [N,N,N]
- Prevalently Inactive [N,N,O] or [N,N,D]
- Unstable [O,D,N]

Of course the *Annual Prevalent Status* has 8 items against the three traditional statuses, but they are comparable and words have similar meaning.

If the interest is only on the mobility it is possible to aggregate only for Stable (something), Prevalent (...ly something) and Unstable.

Another way to deal with mobility is to consider in the *PATH* variable the number of changes (in this case the order matters), *Changes* will vary from 0 to 2.

If the interest is on the participation to the labour market an *Annual Active Status* can be established as follows:

- Stable Active [O,O,O] or [O,O,D] or [D,D,D] or [D,D,O]
- Prevalently Active [O,O,N] or [D,D,N] or [O,D,N]
- Prevalently Inactive [N,N,O] or [N,N,D]
- Stable Inactive [N,N,N]

Again, the traditional active status is a dichotomic variable while the annual one has 4 items but this fact brings useful added information.

The traditional definition of status is hierarchic, the three items are ordered from employed to inactive and if an individual shows two items at the same moment he will be assigned to the highest one. For instance if in the same week an individual has been both employed and unemployed he will be assigned to employment. Using the same convention it is possible to build the *Annual Working Status* variable:

- Employed [O,O,O] or [O,O,D] or [O,O,N] or [D,D,O] or [N,N,O] or [O,D,N]
- Unemployed [D,D,D] or [D,D,N] or [N,N,D]
- Inactive [N,N,N]

In this case the Labour force is calculated as the sum of annual employment plus the annual unemployment. Starting from this concepts it will be easy to calculate an *Annual Employment Rate* or an *Annual Unemployment Rate* or an *Annual Activity Rate*.

The meaning is different from the traditional working status, here the important thing is to have been employed at least once in the year or to have participated at least once in the labour market. The A kind economy will show equal aggregates and rates both in the traditional and the annual point of view. The B kind economy will show different figures in the traditional than in the annual indicators: the number of annual employed will result much higher than the average traditional employed and it will be possible to distinguish between the A and the B kind of markets. The higher the mobility in the market the higher will result the difference between the traditional and the annual indicators. A limit situation (total immobility) will show them exactly equal, this proof how near and related are the concepts they are built on, and justify the possibility of the comparability between them: even though they are born from different approaches it is correct to calculate their distance. Must be said that, because of this relationship, it is possible to affirm that also the annual indicators are static indicators. They are not dynamic and are not flows. They are designed to reveal certain properties of the supply of work of the system.

Other aggregates can be suggested that have no similar in the traditional definitions: *People with experience of unemployment*: anyone who has been searching for a job at least once, or *People with experience of inactivity*. They can be interesting groups of interest being people that live on the edge of the market.

3. Some Evidences From the Italian Labour Market

As an example, an application on the Italian labour market has been realized. The exercise refers to the years 1993, 1996, 1999 and 2002, in order to allow temporal comparisons, and only to the population between the age of 15 and 64. Only results on employment are reported here.

The first indicator to be considered is the *Annual Employment Rate* that, in the 1993, is equal to 56.4%, against the traditional rate that is equal to 50.9% in the same year. The difference, equal to 5.5 percentage points, is a measure of the degree of mobility of the market. In the following years the annual rate grows respectively to 51.9%, to 52.5% and to 55.4% and their difference from the traditional rate decrease first to 2.7 pp., and then increase to 3.7 pp. and to 3.5 pp. not reaching any more the initial value. The ratio of the *average employed people* (traditional level of employment) over the *annual employed people* can also be considered as an indicator of the degree of mobility: it is always between 0 and 1, equal to 1 in case of no mobility (actually in case of three observations per individual the minimum will be 0.3). In Italy this ratio, in the 1993, is equal to 92.2% and grows to 93.2% in the 1996, to 93.3% in the 1999 to ends up to 94.1% in the 2002, constantly increasing with time. To end this short exercise of analysis for the Italian employment let's consider the average number of the suggested variable *changes* for the *annual employed*. Trivially this number is equal to 0 in the most stable market and equal to 2 in case of maximum of mobility. In Italy, along the four considered years, this indicator is equal respectively to: 0.20, 0.19, 0.18 and to 0.16, showing a decreasing trend over time.

All the reported indicators show that the Italian labour market is characterized by high mobility. And this is not an emerging feature: it is an historical evidence. Even better: it seems that mobility was higher in the 1993 than in recent years, most probably because of the cycle phase. This not-intuitive conclusion is confirmed by recent studies based on the transition matrices issued by the Istat.

References

- Husmanns R., Mehran F., Verma V. (1990): *Surveys of economically active population, employment and underemployment: an ILO manual on concepts and methods*. Geneva, ILO;
- Gennari P. Gatto R. (2004): "Una analisi del mercato del lavoro italiano basata su indicatori periodali", atti del XIX convegno nazionale di economia del lavoro, AIEL, Associazione Italiana Economisti del Lavoro, Modena, 23-24 Settembre;
- Ceccarelli C., Discenza A.R., Rosati S., Paggiaro A., Torelli N. (2002): *Le matrici di transizione della Rilevazione Trimestrale sulle Forze di Lavoro. Nota metodologica*. ISTAT, Roma;