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INCOME STATISTICS FOR THE AGRICULTURAL HOUSEHOLDS SECTOR

by

B. HILL*

1 Introduction

Economic statistics about agriculture are required to service various requirements of the European Union (EU), including the measurement of the contribution of agricultural production to the general economy and the monitoring of developments in markets of agricultural commodities (price statistics and market balances). The dominant fundamental policy issue of the EU's Common Agricultural Policy (CAP) concerns the well-being of farmers and their families, and this requires the provision of statistics on their incomes. The CAP's objective of "ensuring a fair standard of living for the agricultural community" appears in the 1957 Treaty of Rome and its relevance has been carried over into many later policy statements, including the major policy review started by the European Commission in 1997 under the *Agenda 2000* banner.

In practice, when assessing the nature and extent of the income problem in agriculture, attention of EU policy-makers has hitherto focused almost entirely on the residual income derived from the production of agricultural commodities. At both aggregate and microeconomic levels harmonised EU statistical systems are in place for measuring agricultural productive activity in economic terms. At aggregate level, the EU's set of Economic Accounts for Agriculture (EAA) for Member States and the EU as a whole are based in the system of national accounts¹. A suite of indicators of residual aggregate income is derived from the EAA, and these are frequently cited in official publications. The methodology of the EAA has recently been modified (EUROSTAT, 1997) to accord with revisions in the underlying systems of national accounts (EUROSTAT, 1996a).

Microeconomic statistics on agricultural production come from the FADN, an annual survey of some 62,000 farm businesses throughout the EU, set up in 1965. Methods of data collection vary widely between Member States, as in many countries the EU FADN requirements were grafted on to pre-existing data systems (COMMISSION, 1989). In selecting the FADN sample of holdings a minimum size threshold is applied, which varies between Member States to reflect their diverse farming structures. The outcome is that, while the great majority of agricultural activity falls within the FADN field of observation (82% in 1993), only 50% of holdings (and therefore of heads of holdings) that appear in the Farm Structure Survey are covered. This

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¹ The methodology of the EU's EAA is not identical to the treatment of agriculture within national accounts, since small modifications are made to represent what appears to be a more relevant approach when looking at this single industry. However, these deviations are relatively minor and can be fully reconciled by a "bridge" account between the EAA and national accounts.

constrains analyses that focus on the operators and makes interpretation of EU-level FADN results for the smallest sizes of farm difficult.

At both aggregate and microeconomic levels these harmonised EU statistics only relate to agricultural activity (though somewhat less strictly in FADN than in the current EAA approach), even though the presence of other income may be significant in an explanation of the way in which farming is carried out (such as intensity of land use, investment behaviour, farm viability etc.), especially in countries dominated by small farms and pluriactivity and also where production takes place mainly within large integrated units. The recent revision of coverage under the EAA will not significantly change this orientation (HILL, 1998), and attempts to extend FADN coverage to non-farming income have met strong opposition from some Member States (ROBSON, 1996).

2 Statistics on the economic situation of the agricultural households sector

Commentators have long argued that, because of the aim of agricultural policies in industrialised countries to support living standards and incomes, and the inter-relationship of the agricultural and other activities within farm family businesses, statistics should also be available that take a broader view of the economic activity of farmers and their households (reviewed in HILL, 1996; OECD, 1995; and subsequently including AHEARN, 1996; BLANDFORD, 1996; DAVEY, 1996). At least part of the poor performance of the EU's existing CAP in terms of its transfer efficiency can be blamed on the tendency for decision-makers to interpret statistics on the rewards from agricultural production as if they showed the personal incomes of agricultural households. The strength of the argument for statistics that cover all income sources has increased for the EU with the greater emphasis given to the encouragement of diversification by farmers and their families into other form of economic activity as part of the 1992 reforms of the CAP, given further impetus by the rural development proposals outlined in the European Commission's *Agenda 2000*.

Until recently, no systematic and EU-wide economic statistics based on agricultural households were available. To meet a perceived need, in 1985 Eurostat initiated aggregate statistics on the overall income situation of the agricultural households sector in Member States (Income of Agricultural Households Sector (IAHS) statistics, formerly termed the Total Income of Agricultural Households (TIAH) statistics). Following a period of methodological development, which threw up some awkward questions about the target group for agricultural support and required statisticians working in agriculture to investigate data sources and processes that were outside their normal experience, results were published in 1992, 1995 and from 1996 annually. Member States vary widely in the run of years for which estimates are available and their level of detail; Germany has the longest series (starting in 1972), though there has been an interruption to results since 1993 because of data problems in part associated with enlargement. Nevertheless, what emerges from IAHS statistics, even in their present form, offers challenges to the perception of the income problem in agriculture, even questioning whether there is an income problem at all for farm households as a group.

3 Income of the Agricultural Household Sector (IAHS) statistics - basic methodology

Sector-level statistics on the income situation of agricultural households in the EU are, like the aggregate production accounts, based in the system of national accounts, being in essence a disaggregation of the Distribution of Income Account for the households sector of national accounts into sub-accounts for a range of socio-professional groups, of which agricultural households form one (EUROSTAT, 1996b). A feature of this account is that it covers all the

income of households (from farming, from other entrepreneurial activities, from dependent activity, from property, welfare transfers etc.) and, by deducting taxation and social contributions, allows the calculation of net disposable income, a concept that is often taken as a major indicator for standard of living.

A highly significant part of the IAHS methodology, and one which can have a substantial effect on the results, is the system used for classifying households as agricultural or belonging to some other socio-professional group. Many alternative bases of classification have been proposed (reviewed in HILL, 1990), and national accounts methodologies express preferences for systems based on the income structure of the entire household (EUROSTAT, 1996). Unfortunately, no official EU statement exists about the composition of "the agricultural community" which could be used as guidance in defining an agricultural household. Reflecting largely practical considerations, and bearing in mind that comparisons between the income situation of agricultural households with that of other groups is desired, for the purpose of classification in IAHS statistics households are allocated to socio-professional groups on the basis of the main source of income of the reference person (typically the head of household or the largest contributor to the household budget). This system allows a complete and consistent allocation of households to occupation groups. Thus an agricultural household is one in which the main source of income of the reference person is from independent activity in agriculture. Some Member States, that cannot at present use an income criterion, substitute the main declared occupation of the reference person. This definition of an agricultural household is sometimes labelled "narrow" since it excludes those households which operate a holding but where farming is not the main income of the reference person (or the person's main occupation). Of course, when measuring household income the incomes of all members are summed, but these additional incomes are not considered at the classification stage.

Though the main focus of attention of IAHS statistics remains this "narrow" definition, there is some demand from policy-makers for additional income estimates, made occasionally, using a "broad" approach, which covers all households that operate an agricultural holding. In the IAHS methodology provision exists for making estimates using a "broad" definition of an agricultural household, to include those in which any person derives some income from independent activity in agriculture (other than income solely in kind). By deduction, it is possible to obtain information on the income situation of those "marginal" households that operate an agricultural holding but where farming is not the main income source of the reference person.

4 Ways of generating results

The diversity of data sources found in Member States has meant that, though target definitions are harmonized, the way in which estimates are actually created must be allowed to vary from country to country (EUROSTAT, 1998). Two basic approaches are used:

- *Subdivision of the national accounts household sector Distribution of Income account (macroeconomic approach).* Economic aggregates are broken down to form separate sub-accounts for agricultural households and for other socio-professional groups. Often this is done by means of distribution agents taken from surveys of tax declarations or family budgets where absolute figures may not be consistent with national accounts but where relativities have acceptable validity. Countries using this approach include Belgium, Germany, Spain, France, Italy, Netherlands, and Portugal.
- *Grossing-up microeconomic data* to the household sub-sector level for agricultural and other socio-professional groups can be based on data collected in household

budget surveys, taxation records (total or samples), administrative registers, farm accounts surveys etc. A drawback of this approach is that it may not produce estimates consistent with national accounts in terms of values or detailed list of items covered in reaching disposable income. Countries using this method include Denmark, Ireland, Austria, Finland, Sweden and the United Kingdom.

5 Summary of general IAHS findings

The main IAHS findings are of obvious relevance to the way in which the problems to be addressed by agricultural policy are perceived and to the way that policy is formulated (EUROSTAT, 1998). Though generally in line with what has been known for Germany for some time (mentioned in English by SCHMITT and BOROSE, 1996; WOLFGARTEN, 1996), for many Member States such quantitative information on their agricultural households sector was not previously available. The findings may be summarised as follows.

- a) The number of agricultural households (where the main income of the reference person comes from farming) is substantially smaller than the number of households where there is some income from farming, and generally smaller than the number of agricultural holdings. Where data exist over time, absolute numbers of agricultural households have been falling, in some countries very rapidly.
- b) Agricultural households (defined in the "narrow" sense) in all EU Member States countries are recipients of substantial amounts of income from outside agriculture. Though typically about a half to two thirds of the total comes from farming, there are large differences between Member States and some between years.
- c) The total income of agricultural households is more stable than their income from farming alone. Non-agricultural income (taken together) is less variable from year to year than is farming income. Disposable income seems to be less stable than total income, but the relationship between the two depends on a variety of factors, including the way that taxation is levied nationally.
- d) Countries differ widely in the share of income taken from agricultural households in taxation and other deductions, so the same average total income figure can imply different levels of disposable income in different Member States.
- e) In almost all Member States agricultural households have average disposable incomes per household that are typically similar to or higher than the national all-households average, although the relative position is eroded or reversed when income per household member or per consumer unit is examined. However, there is substantial variation from year to year.
- f) On average, in countries where data are available, households with an agricultural holding but where farming is *not* the main income source of the reference person, appear to derive little income from farming; this implies that changes in the prosperity of farming, including those resulting from changing the level of policy-related support, are of little importance to their disposable incomes. Their average disposable income can be greater or smaller than incomes of agricultural households, depending on the country in question.

6 Microeconomic data based on the agricultural household unit

There is no EU-wide harmonised microeconomic information about the overall (total) income situation of agricultural households. This represents a major gap in the information system, a finding of many commentators including the OECD (BLANDFORD, 1996; O'ÉCD, 1995), as

many policy issues have distributional connotations. The spread of household incomes is thought to be particularly wide in agriculture, and hence a satisfactory group average may hide a disproportionately large number of low-income cases. Income problems may be concentrated on farms of particular sizes, types, locations or other socio-economic characteristics.

Studies have to rely on analyses of situations where data can be found, and the findings may not be applicable elsewhere (HILL, 1996). Even basic data are patchy, sometimes of dubious quality and, in many countries, simply lacking. As noted above, the EU farm accountancy survey questionnaire does not cover other sources of income, though national surveys of farm businesses in some countries do so. In most southern Member States taxation of farmers is not on an actual income basis, and in some others tax records are unsuitable for technical reasons as a basis for statistics. Household budget surveys have few cases in northern Member States; in southern ones, where they are more numerous, income data are of low quality. The overall picture is that, while a few countries have good basic data (Denmark, Germany, Ireland, Netherlands, Sweden, Finland) and often several sources, the others lack even one satisfactory source. The OECD has observed that information of this sort is generally far better in OECD countries outside the EU (BLANDFORD, 1996; OECD, 1995).

7 Critical issues for research

The development of Eurostat's IAHS statistics has thrown into prominence a number of technical issues and interpretative problems that are relevant to both aggregate and household-level studies and that merit further research work. Here there is only room to mention some of the more important of them.

7.1 Suitability of the dwelling household unit

At present in IAHS statistics the household unit is defined as in national Family Budget Surveys; these typically include all members who live under the same roof and share meals. However, for assessing incomes it might be more appropriate to narrow this to a "core" group comprising a couple and dependants (that is, other adults who were financially independent would be excluded). Such persons may be of particular significance in southern Member States. While in some countries tax statistics employ a unit (the fiscal household) that approximates to the "core", in many others the lack of basic data appears to prevent movements towards basing statistics on this group. Further research is needed on the inter-relationships of adults within agricultural households, and their income- and expenditure-sharing behaviour.

7.2 Income stability

At present both aggregate and (more importantly) microeconomic income measurement is made over the period of a year. This is probably inappropriate for agriculture, where farmers expect, and take actions to counter, short-term income variations. Annual measurement may have the following consequences

- a) there is a failure to distinguish between those farm households that have occasional low incomes from those that face a persistent low income problem, and
- b) any system that classifies households annually on the basis of their main incomesource is likely to see the number of agricultural cases fluctuate substantially, making interpretation of group results difficult.

Empirical work (for example BRANGEON and JEGOUZO, 1992; CORDTS *et al.*, 1984) suggests that income averaging over three years largely eliminates the random fluctuations, and that income averaging over this period would present a more realistic picture. However, severe technical problems frequently crop up when attempts are made to measure household (or farm) income at case level over a run of years. For the purpose of IAHS statistics most Member States employ less formal systems to give a degree of stability to household classifications.

7.3 Long and medium-term shrinkage in household numbers

Potential uses for the IAHS statistics are *inter alia* to observe how the income composition of agricultural households changes over time (particularly as they diversify into non-agricultural activities), to trace the development of their total (or disposable) income over time and to compare it with movements experienced by other socio-professional groups. However, the IAHS statistics show that in all countries the agricultural households group ("narrow" definition) comprises a shrinking number of cases. To study income developments over time a constant sample (or "panel" approach) is preferable, and the changing nature of the "narrow" sector must be borne in mind when interpreting IAHS results. This problem is exacerbated, of course, if short-term instability is not dealt with along the lines of 7.2.

7.4 Macro-micro integration in income definition

The definition of disposable income, as laid down in the methodology of the IAHS statistics, is essentially that appropriate to national accounts. This means that certain flows between households and other sectors (such as property income attributed to insurance policy holders) have to be accounted for which would not be considered as income in microeconomic studies; such macro-micro disparities are a familiar statistical problem (RUGGLES and RUGGLES, 1986). Among IAHS statistics this leads to gaps in data from countries relying mainly on grossing up household surveys or tax data and a lack of international comparability (though the importance of this should not be overstated²). Consequently there is a need to re-examine what is the most appropriate definition of disposable income, and to move the IAHS methodology towards harmonisation on this.

8 Comment

EU statistics based on agricultural households are recent, conceptualisation is not a finished process, and the latest available IAHS results are rather dated. Without wishing to ignore technical shortcomings, it is nevertheless clear that the published results do not sit happily alongside the perceptions of many politicians that farmers and their households are in need of income support. In interpreting IAHS statistics, policy-makers are confronted with awkward questions, such as which households are the target group of the CAP and thus who should have their incomes measured.

While the relevance of harmonised and up-to-date household-based information to policy is set to expand as the proposals of *Agenda 2000* are implemented, there are many institutional interests that stand to be undermined by any move to increase the prominence of IAHS statistics. Experience at national level of countries where agricultural household income statistics have been available for many years (including the USA) suggests that there are pressures to marginalise and ignore them when making agricultural policy decisions,

² The items not covered in Ireland's 1987 Household Budget Survey accounted for about 85% of the total resources covered by the IAHS macroeconomic concept.

highlighting technical deficiencies in an attempt to reduce their credibility (HILL, 1996). Thus for the foreseeable future the emphasis in the production of IAHS statistics is likely to be on consolidation and quality enhancement, in particular by ensuring the statistics cover all Member States and are recent, thereby their improving their utility.

But aggregate statistics alone are not enough. If, as IAHS results imply, agricultural households as a group do not appear to suffer from particularly low incomes, greater emphasis becomes attached to knowing more about the distributional features of household incomes. At this microeconomic level the lack of EU statistics is highly regrettable. The best way to fill this statistical gap is not clear since all the options (principally comprising extending the FADN questions, using tax records, drawing on household budget surveys) face formidable practical problems at present. Nevertheless there is some virtue in developing the basic methodology of a harmonised microeconomic system (definitions of income and so on, bearing in mind the desirability of maintaining complementarity with Eurostat's IAHS statistics where possible) so that targets exist towards which individual countries may move, utilising whatever data sources they can develop.

In the meantime, the attention of EU users should be drawn to the profound differences between statistics that take the agricultural production unit as their basis and those that are founded on the agricultural household. Explanation and interpretation in the process of providing information may also, by requiring the consideration of central issues in policy, such as what constitutes the agricultural community, both ease the task of the agricultural statistician in providing statistics that meet better articulated user needs and, ultimately, improve the effectiveness of agricultural support policy.

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