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Abstract

At a time when policy-makers in many developed countries continue to justify farm support on the basis of relatively low and unstable incomes, this chapter shows that incomes of farm households are not particularly lower on average compared to those of non-farm households in most of the ten selected OECD member countries. What is however striking is that income disparity and poverty are greater in the farm community compared to the non-farm community in most of the selected countries. This analysis questions therefore the continuation of indiscriminate farm income support. It also calls for the need of collecting farm household data that would allow a more effective targeting of farm support and for revising fundamentally public interventions towards the agricultural sector.

JEL classification: Q12, Q18

Key words: farm household income, farm problem, LIS data, OECD countries

Farm Household Incomes in OECD Member Countries over the Last 30 Years of Public Support

At a time when policy makers in many developed countries still continue to justify farm support on the basis of relatively low and unstable farm incomes, this chapter examines first to what extent incomes of farm households are performing on average compared with those of non-farm households in several Organisation for Economic Co-operation and Development (OECD) member countries over the last thirty years. It then compares income distribution and poverty between the farm and non-farm communities.

Among the three broad areas of concern with respect to agricultural policy (Hill, 1966), this chapter concentrates on the so-called parity issue (are farmers rewarded comparably with otherwise occupied individuals) and on the poverty issue (is low income prevalence greater among farm families).[1] Because of the lack of appropriate panel dataset, it leaves aside the no less important instability issue (do farmers face more severe temporal income variations). This chapter starts to briefly review the farm problem in the next section and then proceeds to the parity and poverty analysis in the following sections.

1. The farm income problem in the literature

Low and unstable farm income has continuously been used to rationalise public support to farming in many developed countries. For instance, in the United States (U.S.), large-scale interventions to control farm supplies and increase farm prices began with the Agricultural Adjustment Act of 1933 in a view to raise the level of farm income and close the income gap between farm and non-farm households (Gardner, 1992; El-Osta *et al.*, 2007). Such government interventions subsequently took a permanent twist with the Agricultural Act of 1949. Today, the budget of the U.S. 2014 Farm Bill for the so-called farm safety net that contains the commodities and crop insurance titles aiming at shielding farmers against sharp fluctuations in commodity prices as well as crop failures and prices decline is planned at US$134.2 billion for the budgetary period, or about US$13.4 billion per year. This is a sum that corresponds to 14 per cent of the total outlays of the 2014 Farm Bill but 68 per cent of the outlays without the food stamps and nutrition programmes.

[1] These three issues actually form the core of the farm problem, recurrently treated in the economics literature for decades (see Gardner, 1992; Bonnen and Schweikhardt, 1998).

In the European Union (EU), one of the five objectives of the Common Agricultural Policy (CAP) in the 1957 Treaty of Rome (Article 39) establishing the European Economic Community (EEC), subsequently repeated in the 2010 Consolidated Version of the Treaty on the Functioning of the EU is "… to ensure a fair standard of living for the agricultural community, in particular by the increasing of the individual earnings of persons engaged in agriculture". This specific objective has been carried forward into subsequent European legislation. In this context, the budget of the 2014-20 CAP financial framework is divided into so-called two pillars, of which the first is mainly dedicated to support farm incomes and limit their variability.[2] It is planned at €317.2 billion for the budgetary period, or about €45 billion per year, a sum that corresponds to 76 per cent of the combined budget of the two pillars of the CAP.

Likewise, OECD's (2004, p. 1) policy brief clearly summarises the (apparent) issues: "Improving the income situation of farm households remains a prominent objective of agricultural policies in many OECD countries". Whereas additional concerns came to the attention of policy makers in the last twenty years such as environmental protection, food safety and quality, animal welfare and rural economy viability, government programmes in the name of supporting and stabilising farm income still consume large sums of public money.

Despite the above justifications, evidence accumulated during the 1970s and 1980s (Gardner, 1992) dismisses the prevalence of low average incomes among farmers in the U.S. since the second half of the 1960s.[3] Thereafter, using data from the Agricultural Resource Management Survey (ARMS) of the USDA and the Survey of the Consumer Finances (SCF), Mishra *et al.* (2002) not only confirm that average incomes are similar for farm and non-farm households but also show that average wealth for farm households exceeds that of non-farm households in the U.S. for 1999. Using the same data, Katchova (2008) estimates that average household incomes are not significantly different when they are compared between commercial farms (those with sales greater than US$250,000) and non-farm entrepreneurs as well as between intermediate farms (those with sales lower than US$250,000) and wage-earning non-farm households in the U.S. for 2004. Similarly, using here the Integrated Public Use Microdata Series, Peake and Marshall (2009) find no significant differences between household income levels of farm and non-farm entrepreneurs in the U.S. for 2005. In terms

[2] The second pillar of the CAP is mainly dedicated to assist agricultural adjustment, protect rural environment and promote non-agricultural activities.

[3] Thanks to data collected by the Economic Research Service (ERS) of the U.S. Department of Agriculture (USDA).

of self-employment income, however, they show that the farm self-employed have a significant higher level of income than the non-farm self-employed.

In Canada, results from the tax-filer database reported in Hill (2012) suggest that farm households with gross farm revenues greater than Cdn$10,000 have on average an income similar to the all-households income average since the early 1970s. Results from the Farm Financial Survey database indicate that average household incomes of farmers with gross farm revenues greater than Cdn$10,000 come at or close to the all-households income average in 2001 for most of the provinces except Manitoba (Hill, 2012).

In Australia, results from a three-year survey from 1989/90 to 1991/91 reported in Hill (2012) show that farm households have on average an income that is 89 per cent of the average household income. Results from the survey of Income and Housing Costs also reported in Hill (2012) indicate that farm households have on average an income that is about 90 per cent of the average income of households having no member employed in agriculture in 2011.

Less empirical evidence is available for other developed countries. Scattered national statistics collected by the Statistics Office of the European Communities (EUROSTAT, 2002) between 1972 and 1999 suggest that farm households have on average an income close to or higher than other households in most of the 15 EU member states. According to Hill (Agra CEAS, 2007) , "the fragmentary evidence that is available [at the EU level] suggests that, far from being a disadvantaged sector of society, EU farm households as a group have relatively high incomes compared to the rest of society " and are of even higher wealth. In addition, an OECD (2003, p. 3) study also confirms that, "in most OECD member countries, farm households enjoy, on average, income levels that are close to those in the rest of the society". In sum, these empirical results do not suggest that farm households, as a group, have low average incomes in most OECD member countries.

Above general income studies, however, make abstraction of two key issues. First, sub-sectors involved in the production of "homogeneous, high volume, bulk commodities and a few major perishables and non-food products" might be particularly vulnerable (Bonnen and Schweikhardt, 1998, p. 5). In a related aspect, Hill (1999) also pinpoints that some types of farm activities which are relatively labour-demanding and exacting in timeliness such as dairy farming may impose constraints on farm households in complementing their income from off-farm sources even when their incomes from farming might be satisfactory. Second, would the disappearance of the farm income problem either in the U.S., the EU or other OECD member countries, still prevail in the absence of government intervention? Gardner (1992), for instance, questions estimates from past studies that have evaluated the effects of policies on

farm income. He outlines the difficulties in correctly estimating the structural effect of farm programmes on income, particularly when these programmes have varied so much trough time.

To what extent do income distribution and low-income incidence differ between the farm households and non-farm households? These are relevant research questions for gearing future policy. In that respect, Gardner (2000) reports that both income inequality and poverty continue to fall among U.S. farm families during the 1970-90 period to the point that the poverty rate for farm households falls below the poverty rate for non-farm households by 1990. In addition, Mishra *et al.* (2002) report that the income distribution is slightly more concentrated among farm households compared to non-farm households in 1997. Katchova (2008) shows that income inequalities are similar for farm and non-farm households but slightly higher for intermediate farms compared to wage-earning non-farm households and commercial farms compared to non-farm entrepreneurs in 2004 for the U.S.

The use of the Canadian tax-filer database shows that poverty incidence among farm families dramatically declined in the 1970s to stabilize just above 2% of the overall poverty line in the mid-1980s (Hill, 2012). The analysis of the Canadian Longitudinal Administrative Databank indicates that a minority of 14% of farm households suffer chronic low incomes between 1998 and 2007 (Hill, 2012).

From various microeconomic studies from EU member states in the 1990's, Hill (2000) concludes that income disparities among farm households are wider than among households in general, implying that, with an adequate average income among farm households, a greater proportion of poor households might be found among farm households. Another OECD (2001) study concludes that income inequality and low-income incidence and intensity are greater among farm households than among other households in most of the 14 OECD member countries for which data are available from the middle of 1980s to the middle of 1990s. The same study warns that these findings may, however, be affected by underestimating farm household incomes because incomes in kind and asset values are not accounted for and incomes from self-employment, including from farming, may be under-reported in household income surveys.

Plausible causes of the prevalence of low farm incomes in the U.S. until the early 1960s have been proposed in the literature on the farm problem. A review of these causes by Gardner (1992) distinguishes three complementary frameworks of potential explanations. The first framework corresponds to the basic farm problem model that focuses on commodity market conditions. The second framework examines factor market conditions to explain an earning

disequilibrium between the farm and non-farm sectors. The third framework considers the compensating differential for skill differences and non-pecuniary aspects of farming to explain low farm relative to non-farm earnings. To understand the growth in incomes of farm households relative to non-farm households that prevailed in the U.S. since the 1940s, Gardner (2002) focuses on adjustments in the labour market with increasing economic integration between the farm and the non-farm sectors, in particular migration off farms and non-farm sources of income for households remaining on farms. He finds that labour-market integration is by far the predominant factor in the improvement of economic condition of low-income farm households between 1960 and 1980 in the U.S., instead of specifically agricultural variables such as government payments, agricultural productivity growth or farm-size growth.

Bonnen and Schweikhardt (1998) further develop these first two explanatory frameworks, while adding an historical perspective to them. They also strongly argue that the fragmentation of the farm sector into many diverse sub-sectors having their own economic peculiarities and market structures should be considered when addressing the whole question of the economic vulnerability of commercial farming. According to them, focusing on the farm sector aggregate supply function to explain the economic vulnerability of the farm sector as a whole has become obsolete. They recommend that any macroeconomic analysis of the performance of the farming sector requires a consistent underlying microeconomic framework.

Assessing the extent of low farm income is fraught with many measurement and accounting difficulties (see Gardner, 1992). Low farm income has generally been evaluated by comparing the average income of farm households to the average income of non-farm households at the country level using a combination of individual farm account data, household income survey data and sector-level aggregated income data. When income comparisons do exist, for example, from USDA (2015), EUROSTAT (1999 and 2002) and OECD (1999 and 2003), they are sensitive to the sources of information, the methods of estimation, and the definitions of incomes and farm households versus non-farm households that are used. These difficulties may also explain why factors identified in the economic literature, for example in Gardner (1992), which may result in low farm incomes, have never been tested systematically across different years and countries using empirical data. The conclusion of the OECD (2003, p. 33) study acknowledges "the absence of adequate information on the income situation of farm households" for properly designing and implementing income policies that are still prominent in most OECD member countries.

This chapter therefore aims to fill this gap by using meaningful income comparisons between farm and non-farm households for ten developed countries over a period covering the last thirty years. The next section of this chapter compares the average income levels of farm households to those of non-farm households by using the same harmonized database for years and countries for which data are available and applying consistently the same definitions of household categories across the ten selected countries over the 30-year period. The third section compares indicators of income distribution and poverty between farm households and non-farm households. The last section concludes with some general policy implications.

2. Comparisons of farm and non-farm household income levels

Both the comparative and econometric analyses use the microeconomic database from the *Luxembourg Income Study* (LIS). This dataset contains socio-demographic, expenditure and income data that are collected at the household level through national household-based budget surveys. Using this microeconomic database that is harmonized across households, years and countries has the great advantage that the same source of information for household incomes and characteristics is used making comparisons across household categories, years and countries meaningful. Household data also allows the examination of the incidence and intensity of low income.

From this database, we use the disposal household income net of taxes and subsidies to measure household income. This net disposable income of a household is then adjusted to account for its size and composition using an equivalence elasticity of 0.55 that corresponds to the power by which the needs of a household increase as the household size increases (see Förster, 1994). This measurement of personal incomes better reflects the standard of living of the farm community than the income of farm self-employment, since it includes all sources of income of the household which is greatly relevant for most farm households. In addition, it also allows a comparison with the standard of living of households outside the farm community. This approach is advocated by Offutt (2002) and also implemented by the USDA.

In contrast, the European Commission prefers to calculate the reward of farming activities per work unit of family labour and compares it to the wages and salaries in the total economy per work unit of labour. This approach introduces two biases. First, it disregards any other incomes that can be nevertheless particularly important for the economic well-being of a majority of farm families. Second, it compares different sorts of rewards: rewards of farming

activities that include some rewards to family-own land and capital in addition to rewards to family's labour, on one hand, and rewards to employment labour only, on the other hand. The European Commission (2011, p. 8) defends its approach in a footnote of an annex on the basis that it "focuses on farms and the agricultural sector as unit of analysis, not on agricultural households. The reason for this is that the objectives of the CAP are linked to the operation, competitiveness and performance of the sector/farm as an economic unit and not the economic survival of a household. … Furthermore, there is little available data on incomes at the farm household level that could be used for analysis."

We nevertheless believe, as do others (Hill, 1996, 1999; OECD, 2003, 2004), that the European Commission uses an ambiguous approach to approximate the "standard of living for the agricultural community" and compare it to the non-agricultural community. Not collecting and analysing data on incomes at the farm household level neither is a sensible justification for a yearly budget of about €45 billion, dedicated to farm income support. The EU Court of Auditors (2004) has challenged the income assessment method of the European Commission and concluded that EUROSTAT does not have a satisfactory means to assess the CAP's objective of achieving a fair standard of living of the agricultural community.

In this chapter, the distinction between farm and non-farm households is made according to the source of the household's net disposable incomes. We follow the OECD (2001) 'narrow' definition of a farm household as that in which the household's farm self-employment income is equal or greater than half of its factor incomes.[4] This OECD 'narrow' definition closely matches the EUROSTAT (1995) definition of an agricultural household as being one where more than half of the income of the head of household comes from farming (Hill, 1995). We also follow the OECD (2001) counterpart definition of a non-farm household as that in which the household's farm self-employment income is lower than half of its factor incomes.

We could use the OECD 'broad' definition of a farm household as that in which the household's farm self-employment income is not zero and the counterpart definition of a non-farm household as that in which the household's farm self-employment income is null. Following this 'broad' definition of a farm household would, however, include households

[4] Factor incomes consist of gross wages and salaries, farm self-employment income, non-farm self-employment income and cash property income. The farm self-employment income corresponds to the profit from the unincorporated enterprise, including payments from government farm programs, and is recorded gross of social insurance contributions and income taxes but net of operational expenses. Incomes in kind are not accounted for in the U.S. and Canada LIS samples. A household which has negative farm self-employment income is also included as a farm household when its factor incomes are also negative and its farm self-employment income is smaller than half of the factor incomes. Otherwise, the household with negative farm self-employment income is considered as a non-farm household.

whose farm self-employment income contributes marginally to their factor incomes. This OECD 'broad' definition of what constitutes a farm household is close to the current USDA (2016) definition of farm operator households which consist of households of the primary operators of family farms in which, according to the 2005 USDA definition, the majority of the farm business assets is owned by individuals related by blood, marriage, or adoption and from which a minimum of US$1,000 of agricultural products is produced and sold or would normally been sold during a year. But, we decide not to use this OECD 'broad' definition in our main data analysis because we would include farm households whose livelihoods do not mainly depend on farming.

We could narrow down this category of non-farm households to those households whose non-farm self-employment income is greater than half of their factor incomes to compare two categories of households whose self-employment activities contribute for at least half of their factor incomes so that compensation for business risk and return to business fixed assets are considered in both farm and non-farm household categories. We, however, do not use this definition of non-farm self-employed households because self-employment incomes tend to be under-reported unevenly across countries for income tax reasons. Although farm self-employment incomes could also be under-reported, we prefer to rely on income composition to distinguish between farm and non-farm households because using instead the occupation or the industry of the reference person of the household also reported in the LIS database is more likely to raise problems in cross country comparison.

The use of income composition to distinguish between farm and non-farm households is likely to under-report farm households that have accidently low negative or positive farm self-employment income compared with their other incomes while their long-term livelihoods actually depend on farming. To assess the extent of this under-representation, one possibility is to measure correlations among different categories of households defined according to their income composition, occupation and industry. Another possibility is a sensitivity analysis on the threshold of the household's farm self-employment income with respect to its factor incomes defining whether the household is a farm or non-farm household.

From the LIS database, average incomes and indicators of low income and inequality are calculated for farm and non-farm households for OECD member countries that have at least four survey years of data in the database with a minimum of 40 farm households identified according to the OECD 'narrow' definition per survey wave to limit the risk that sampling errors affect the statistical results. Applying these selection criteria, 62 years of data survey covering ten OECD member countries are used for the comparisons of income levels. The ten

selected countries include Australia, Canada, Finland, France, Hungary, Ireland, Italy, Luxembourg, Norway, and the United States. Canada and the U.S. have the longest time series available spanning from early 1970 to late 2000. Australia and Hungary have the shortest time series available from early 1990 to mid-2005s. After the middle of 1990s, national household-based budget surveys from some European countries (for example, Germany, Italy, the Netherlands, Poland and the United Kingdom) have ceased to separate incomes from farm self-employment and other self-employment.

Tables 1, 2 and 3 report the sample sizes of farm and non-farm households identified according to the OECD 'narrow' definition of a farm household as well as the mean and standard deviation of their total adjusted net disposable income by country and survey wave for Australia, Canada, and the United States and for the seven European countries respectively.[5] Larger sample sizes of farm households are found for Canada, Finland and the United States while smaller sample sizes are found for Australia, Italy and Luxembourg. The adjusted net disposable household incomes reported in the three Tables are deflated using the 2005 base Consumer Price Index from the OECD and converted into U.S. dollars using the Purchasing-Power Parity (PPP) exchange rate for household actual consumption from the OECD. The real adjusted net disposable household income expressed in 2005 PPP U.S. dollars is from now referred to household income for conciseness.

[Tables 1, 2 and 3]

Figures 1, 2 and 3 show the ratios of the average income of farm households narrowly defined to the average income of non-farm households for the selected countries and survey years with their 95 per cent confidence intervals that are calculated for large samples, sample sizes being greater than 30. For Australia, Canada and the U.S., average farm household incomes from 1971 to 2010 in Figure 1 fluctuate between 65 per cent and 132 percent of the average non-farm household incomes in the range of 50 per cent of their income ratios where the largest fluctuation is observed for the U.S. Among the 25 farm household income ratios, 12 are significantly lower than the parity level of 100 per cent. This is more the situation for Canada (7 over 11 income ratios) than for Australia (1 over 4 income ratios) and the U.S. (4 over 10 income ratios). Among these 25 income ratios, four are significantly lower than 80 per cent of the parity level (1971, 1998, and 2000 for Canada, and 1986 for the U.S.). For Canada and Australia, after the fall in the farm household income ratio in the 1980s and the

[5] Medians of net disposable incomes may be a superior statistics than the average because of the likely distributional characteristics with few very high-income households raising the average well above the incomes of most households.

1990s respectively follows a period during which the income ratio improves reaching about 80 per cent of the parity level in the 2000s. For the U.S., fluctuations of the farm household income ratio in the 1970s and 1980s reflect the boom and the bust of farming during that period, dipping clearly during the mid-1980s farm crisis. The farm household income ratio stays above the parity level since 2000.

[Figure 1]

Compared to the series of farm household income ratios provided by USDA (2015), this LIS-based series gives a parallel picture of the development of the farm household income ratio despite of using a broad definition of farm households for the former series and a narrow definition for the latter series.[6] We know that incomes from off-farm activities tend to stabilise and even raise the whole incomes of farm households (Mishra *et al*., 2002). These new series of farm household income ratios nevertheless support the conclusion already reached in Gardner (1992) for the U.S. that farm household incomes in these three countries are not chronically low on average.

For the seven European countries reported in this chapter, average farm household incomes from 1978 to 2010 in Figures 2 and 3 fluctuate in the range of 30 per cent of their income ratios where the largest fluctuations are observed for France and Ireland. This means smaller fluctuations than with respect to those observed for the three preceding non-European countries that tend to be more exposed to international markets. Among the 37 farm household income ratios, 16 are significantly lower than the parity level of 100 per cent. This is in particular the income situation for France and Hungary where all reported income ratios are significantly lower than the parity ratio. To a lesser extent, unfavourable incomes also prevail in some years for Ireland (3 over 7 income ratios), Norway (2 over 5 income ratios), Finland (1 over 6 income ratios) and Italy (1 over 5 income ratios) but not for Luxembourg. Among these 37 income ratios, five farm household income ratios are significantly lower than 80 per cent of the parity level (1984 and 2005 for France, and 1994, 1999 and 2005 for Hungary). The income situation of farm households among these seven European countries is therefore less favourable for France and Hungary than for the other five European countries. It is certainly not an unfavourable income situation for Finland, Luxembourg and Norway. The income situation for both Ireland and Hungary improves in the 2000s but that improvement still needs to be confirmed with more recent observations while the income situation for Italy is unsettled since the Italian time-series does not rely on many observations

[6] The correlation coefficient between the two U.S. income ratio series is 0.47 for the ten overlapping years from 1974 to 2010.

and stops short in 1995. From the mid-1990s, there is a noticeable stabilisation of the incomes of the farm households with respect to non-farm households that might be attributable to the income stabilisation effect of the successive reforms of the Common Agricultural Policy (CAP) since 1992 that progressively swift the system of price interventions to a system of direct payments. It would be instructive to confirm whether this phenomenon also applies to Italy after 1995.

[Figures 2 and 3]

Income studies reported in Hill (2012) tend to picture an income situation that is not as much unfavourable for farm households in France, Italy and Ireland. The Institut National de la Statistique et des Etudes Economiques's (INSEE) study shows that the disposable income of French farm households per consumer unit is on average 3 per cent higher than the disposable income of all households in 1997 and 15 per cent lower in 2003. For Italy, the Salvioni and Colazilli's (2005) study shows that the equivalent disposable income of Italian farm households is on average at or above the disposable income of all households between 1995 and 2002. For Ireland, The Central Statistics Office's (CSO) study shows that the disposable income of Irish farm households is on average 5 per cent lower than the disposable income of all households in 2004. Of course, differences in the definition of a farm household, the measurement of disposable income and the sampling method may explain differences in those income comparisons.

These updated series of farm household income ratios calculated from the LIS database and complemented with these three reported income studies confirm that farm household incomes for most of these seven European countries are not chronically low on average with, however, some reserve for France and Hungary.[7] It is therefore an empirical research question to verify this conclusion for other European countries and discover why this does not eventually apply for some European countries.

When the 'broad' definition of a farm household is used, the income picture (not shown here) changes slightly. For Australia, Canada and the U.S., the farm household income ratios are higher and more stable than those calculated on the basis of a 'narrow' definition of a farm household. For the U.S., the farm household income ratios are consistently above the parity level of 100 per cent for the thirty-five years of observations while, for Australia as well as for Canada, the ratios are also above the parity level except for two years of observations. For

[7] The differences in information sources and household definitions prevent the comparisons of these new series of farm household income ratios with those reported in EUROSTAT (2002).

three of the seven selected European countries (Finland, Ireland and Luxembourg), the farm household income ratios are slightly higher than those calculated on the basis of a 'narrow' definition of a farm household. A more diversified source of incomes out of farming indeed tends to stabilise and increase the farm household incomes for a total of six countries out of the ten that are surveyed. That on average farm household incomes are not chronically low is even more evident for these ten OECD member countries when a 'broad' definition of farm households is considered. The farm income problem no longer exists in the ten OECD member countries for which data of farm household incomes are available in the LIS database.

Hypothetical explanations for low income of farm households for some years or countries are several. It can be due to unfavourable commodity or factor market conditions. It can also result from an earning disequilibrium between the farm and non-farm labour markets that can be attributable to adjustment costs in labour movement in the short run, to skill and age differences, non-pecuniary preferences for farming, or other non-comparabilities between farm and non-farm people in the long run, and also from problems in measuring incomes. But, in advanced, well-integrated economies like the OECD member countries, a more plausible source of explanations of income differences involves differences in income-earning capacity as a result of age, gender and skills of people, as well as the non-wages aspects related to the employment (Gardner, 1992).

In 1993 and 1999 for the U.S., Mishra *et al.* (2002) identify the stage at which farm operators are in their life cycle, i.e., their age, as the dominant factor influencing the level and sources of farm household incomes. They also identify farm type and size, operator education, farm tenure, and household size as other contributing factors. In 2001 for the U.S., El Osta *et al.* (2007) confirm that the education level of the primary operator and farm tenure determine farm household prosperity. They also identify the education level of the spouse, ethnicity, location, succession plan, as well as contractual arrangements for purchasing inputs or selling products as other factors of household prosperity. In 2004 for the U.S., Katchova (2008) shows that greater involvement with business activities is associated with higher economic well-being for farm households. Stages in the life cycle or demographic factors also impact the economic well-being of farm households in the study of Katchova (2008). For 2005, Peake and Marshall (2009) confirm the importance of several household and demographic factors for explaining the economic well-being of farm households, in particular the presence of a spouse and the education level of the household head. From reviewing several microeconomic studies, Hill (1999) assembles characteristics associated with the farm

household income: the type and the size of farm, the extent of non-farm incomes, the age of the household head, and the peculiarity of the surveyed years. From those empirical studies, we can sum up that a combination of household (age, education, location) and farm (type, size, tenure, contracts) characteristics seems to explain so far the economic well-being of farm households in both the U.S. and Europe.

Our own preliminary analysis indeed shows a positive correlation between the farm household income ratios and the education level of the household head in the U.S. (0.78 for high level of education), Finland (0.67 and 0.49 for high and medium levels of education respectively), France (0.67 and 0.54 for high and medium levels of education respectively), and Italy (0.13 and 0.41 for high and medium levels of education), but not in Canada (-0.57 and -0.11 for high and medium levels of education) and Ireland (-0.25 and -0.09 for high and medium levels of education). It is inconclusive for the other four countries.

This accumulated evidence is a sign of a mature sector that is not anymore handicapped by a chronic low income problem. Objectives, instruments and expenses of agricultural policy in developed countries need then to be revised in depth accordingly.

3. Comparisons of farm and non-farm household income distributions

The distribution of farm household incomes is now measured and compared to the distribution of non-farm household incomes using the narrow definition of a farm household and its counterpart definition of a non-farm household. Three indicators of income distribution are calculated for each household category, survey year and country. They include the Gini income distribution index as well as the standard poverty measures which are the low-income rate and low-income gap. As in the OECD (2001) report, the low-income threshold is defined relatively as 50 per cent of the yearly median income of all households in the sample, so that the situation of the low-income farm household is assessed relative to all households of the country in a particular year. This relative approach to the definition of low incomes facilitates cross-country comparisons. The two poverty indicators are calculated from the same survey years that contain a minimum of 30 identified low-income farm households to limit the risk of sampling errors. The ratios of one particular indicator for farm households to the same indicator but for non-farm households are then calculated and compared through the available observed period across countries. We however give here more emphasis on the income distribution index that the poverty measures in reporting results.

The Gini index is defined in percentage as twice the area between the line of perfect equality and the Lorenz curve.[8] It is a measure of inequality in the income distribution. For Australia, Canada and the U.S., incomes are generally less equally distributed among farm households than non-farm households. From 1974 to 2010, there is however a discernible trend since 2004 for the U.S. towards similar income inequality among farm and non-farm households. This move into similar income distributions may reflect the increasing role of off-farm sources of income in determining the economic well-being of farm households for the U.S. (Mishra *et al.*, 2002).

In 2004, Katchova (2008) shows that income inequalities tend to rise with the involvement of the U.S. households, be it farm or non-farm households, in business activities. From rural residence farm households, through intermediate farm households, to commercial farm households, the Gini coefficient rises from 0.50, through 0.60 to 0.73 respectively. When these three Gini coefficients are compared to non-farm households without business (Gini of 0.48) and with businesses (Gini of 0.61), then the gap in income inequalities between farm and non-farm households closes down. These comparisons imply that income inequalities of farm-households should be rather compared to non-farm households that are also involved in self-employment income generating activities, not to all non-farm households as done in this chapter.

For European countries, the income distribution among farm households with respect to the income distribution among non-farm households is more contrasted. Finland and Italy have on average Gini indices that are about 20 per cent superior among farm households than among non-farm households. France and Ireland have on average Gini ratios that are less than 10 per cent superior among farm households than among non-farm households. These farm versus non-farm households Gini ratios tend to rise for Italy between the mid-1985s and the mid-1995s but to decline for Ireland between the mid-1985s and the mid-2005s. In contrast, Luxembourg and Norway have on average Gini indices that are similar among farm households and non-farm households. These farm versus non-farm households Gini ratios tend to decline for Luxembourg between the mid-1985s and the mid-1990s, and for Norway between the mid-1985s and the mid-2005s. For Hungary, Gini indices are on average lower among farm households than among non-farm households. In sum, except for these last three

[8] In economics, the Lorenz curve is a graph showing the cumulative share of income earned by the cumulative share of households from lower income. The Gini index can be calculated by the following formula (Förster, 1994): $G = \frac{2}{n^2 \bar{y}} \sum_{h=1}^{n} h\left(y_h - \bar{y}\right) \cdot 100$ where n represents the number of households in the population, y_h the income of the h^{th} household ranked in ascending order by its subscript and $\bar{y}$ the average income.

European countries, inequality in the income distribution is higher among farm households than among non-farm households.

From various microeconomic studies, Hill (1999) proposes different explanations to income inequality among farm households. First, he notices that lowest total incomes are not necessarily associated with the smallest farms, those that generate the smallest incomes from farming, but with larger farms that are too large to be operated on a part-time basis but too small to generate an adequate income from farming. Second, incomes from off-farm activities narrow down the income disparity that can be observed from farming only. Third, some types of labour-demanding farming, like dairying, are not conducive to take advantage of off-farm sources of incomes. Fourth, access to off-farm employment opportunities may be limited in some regions. Fifth, low total incomes in one year for some farm households may be just transitory. The transitory nature of some farm household incomes that results from year-specific farming conditions can indeed cause an overestimation of the disparity in total incomes among farm households. This overestimation could be corrected with an adequate panel dataset through several years.

That the income distribution is moving towards a similar income inequality among both categories of households for Ireland, Luxembourg, Norway and the U.S. calls for a decomposition of income inequality by source of income to measure the contribution of the different sources of income to overall income inequality and determine which particular source contributes to income inequality (Adams, 1991). We hypothesize here that incomes from farming contribute relatively more to income inequality among farm households. We also suspect that the distribution of increasing farm direct payments since 1993 in the European Union as a result of the CAP reforms contributes in aggravating income inequality among farm households because those payments are concentrated on some farm households (OECD, 2001). For example, the Gini index of those payments calculated by Henry de Frahan *et al.* (2010) is 0.50 for Belgium in 2006 implying that 50 per cent of those payments are concentrated on 20 per cent of the farm households that benefit from the highest payments. The Gini index of those payments is even higher at the EU level than in Belgium: 0.74 in 2006, implying that 76 per cent of those payments are concentrated on 20 per cent of the farm households that benefit from the highest payments (European Commission, 2008).

We calculate the ratios of the low-income rate (LIR) for farm households narrowly defined to the LIR for non-farm households across years for nine out of the ten countries. The LIR measures the cumulative proportion of households within the population below the low-income reference. It is a measure of the incidence of low income. Except for some countries

and years, the incidence of low income is in general much higher among farm households than non-farm households. The farm to non-farm LIR ratios, however, vary widely across countries and years making difficult to discern a pattern. For the U.S., the farm low-income rate is generally above the non-farm low-income rate since 1979 with the highest difference in 1986 in the aftermath of the mid-1980s farm financial crisis. Compared to the U.S., the farm low-income rate for Australia and Canada is generally much higher than the non-farm low-income rate. For most European countries the farm low-income rate is generally much higher than the non-farm low-income rate except for some years for Ireland and Norway. The INSEE study reported in Hill (2012) confirms that the poverty incidence is about the double among French farm households than among non-farm households in 1997 and 2003. Even when the average incomes of farm households are close to or higher than the average incomes of non-farm households, the incidence of low income tends to be higher among farm households than among non-farm households except for the U.S. in 1974, Ireland in 1994, 1995 and 1996, and Norway in 1986.

We also calculate the ratios of the low-income gap (LIG) for farm households narrowly defined to the LIG for non-farm households for the same nine countries. The LIG measures the difference between the average income of the low-income households and the low-income reference, as a percentage of that low-income reference. It is a measure of the intensity of low income. For the U.S., the farm low-income gap is generally above the non-farm low-income gap since 1979 with the highest difference again in 1986 in the aftermath of the mid-1980s farm financial crisis. Compared to the U.S., the farm low-income gap for Canada is generally about the same magnitude with respect to the non-farm low-income rate but, for Australia, it is much higher than the non-farm low-income rate. For most European countries, the intensity of low-income rate is generally much higher among farm-households than among non-farm households except for Luxembourg and Norway. Their relative intensity of low income is however generally lower than their relative incidence of low income. This suggests that even if there are relatively more poor households among the farm households than among the non-farm households, poverty level among farm households on average is relatively less acute than poverty level among non-farm households on average. This is particularly the case for Finland, France and Italy. The relative intensity of low income of farm households may in some cases be higher than their relative incidence of low income such as for Ireland. This suggests that poverty level among farm households on average is more acute than poverty level among non-farm households on average.

In summary, all three indicators of income distributions show that, except for a few countries or years, the incidence and the intensity of low income as well as the income disparity are often much higher among farm households than non-farm households for the OECD member countries for which data of farm household incomes are available for this distributional analysis. These comparisons of income distributions between the farm and non-farm communities confirm the conclusion reached in the OECD (2001) report. The incidence of low income and the disparity in incomes are most often higher among farm households than among non-farm households within the same country. For Ireland, Luxembourg, Norway and the U.S., the income distributions among farm households and non-farm households are however moving towards a similar pattern.

This implies that public policy to alleviate low incomes needs to be targeted to the permanent low-income group of farm households. The continuation of a general support would just exacerbate the already large income disparity among farm households. Therefore, to paraphrase Hill (2000), to deal with low incomes among farm households that essentially constitute a social concern, a social policy is most likely to be more adequate.

4. Conclusions and policy implications

Our times-series income analysis from the careful treatment of the *Luxembourg Income Study*'s data confirms that low income is not a chronic problem among farm households anymore in none of the ten surveyed OECD countries. At country level, average incomes of farm households are close or greater to those of non-farm households in most of the surveyed OECD countries since 1970s. It is, however, not clear that some countries like France and Hungary are still facing some recurrent low incomes. This possibility calls for further investigation. One direction would be to extent the time-series of farm and non-farm household incomes to more recent years. Another one would be to examine the influence of earning capacity factors such as differentials in age, gender, education, other skills, location, and even some peculiar conditions of the regional labour market that might explain such recurrent income differences. Farm type, size and location may also have some specific influence.

Large fluctuations in the relative average incomes of farm households from survey year to survey year are observed for some countries, in particular for the U.S., Australia and Canada and, to a lesser extent, for France and Ireland. In the same time, there is a noticeable stabilisation in the relative average incomes of farm households for some other countries, in

particular for Finland, Hungary and Norway since the mid-1995s. It would be then instructive to examine if this relative income stabilisation persists for more recent years and starts to apply for France, Italy, Ireland, and Luxembourg with the increasing direct payments of the successive CAP reforms.

There is, however, a greater income inequality and poverty among farm households than among non-farm households, except for a few countries like Luxembourg and Norway and, more recently, for Ireland and the U.S. The question of the permanent nature of this greater income inequality poverty among farm households calls for an additional investigation that requests the availability of a household panel database. Decomposing income inequality by source of income to identify the contribution of each different income source to the overall income inequality would be instructive and feasible with the LIS database.

Limits to this income analysis are several. First, because the definition of a farm household rests on its income composition, farm households that experience a transitory low farm income with respect to its non-farm income are not anymore reported as farm households generating biases in the average total income level as well as in total income distribution. Second, because the LIS database may under-report income from the farming activity as well as from other self-employment activities, relative average incomes of farm households may be biased downwards and relative poverty of farm households may be biased upwards while relative income distribution of farm households may be less subject to this measurement error if this error systematically applies across self-employment incomes. Third, because either income from the farming activity is not reported separately from the other self-employment activities in the LIS database making impossible to distinguish farm and non-farm households or the number of identified farm households is too small for statistical representativeness, the time-series that is left may become too short for some years and countries. Fourth, because the LIS database does not report farm structural characteristics, it is impossible to explain income from farming or even income from other activities with the help of those characteristics. It is however possible to test with an Oaxaca's (1973) counter-factual decomposition whether some differences in household and socio-demographic characteristics such as age, gender, ethnicity, education, and location that are available in the LIS database may have some explanatory power in income level. Fifth, because the LIS database is not a panel database with repeating identified households, it is impossible to ascertain whether calculated income distribution and poverty are more than just transitory. Finally, not considering wealth as in Mishra *et al*. (2002) and Katchova (2008), this income analysis

provides a partial picture of the economic well-being of farm households with respect to non-farm households.

Policy implications can be several. Because of lack of space, we limit ourselves to the most evident implication that, however, main-stream policy-makers and other stakeholders continue to overlook despite the accumulated evidence. If the general agricultural policy aim still consists in actually closing the income gap between farm and non-farm households, specific objectives can be derived in this logical sequence: i) to define and identify low-income farm households, ii) to determine factors that cause their low-income situation, iii) to orient legislation and funds for mitigating those constraints, and iv) eventually to rely on a social safety net for those low-income farm households that are definitively trapped into poverty. Instruments would then be drawn from a mix of social and fiscal policy, employment and retirement policy, education and training policy, research and development policy, credit and insurance policy, market and communication policy, environmental and recreational policy, and rural and infrastructure policy. Many of those instruments would need to be targeted specifically to identified low-income farm households relying on a means test to determine their eligibility for public assistance. But, most likely, the urgent task consists in organising the collection and analysis of microeconomic farm household data on income composition and hypothetical factors that may characterise and explain their total income situation. Could this outlined policy implication be considered in the next U.S. Agricultural Act or EU CAP reform is still to be seen? Otherwise, we might just as well suggest to remove the main agricultural policy aim from the U.S. legislation and the Treaty on the Functioning of the EU for the sake of better consistency in the intervention logic framed towards the agricultural sector.

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Table 1. Sample size and real net disposable household income (US$/year) for Australia, Canada and the United States

		Sample Size (%)			Real Net Disposable Household Income (US$/year)[a] Mean (standard deviation)		
Country	**Wave**	**Farm hh[b]**	**Non Farm hh[c]**	**All hh**	**Farm hh[b]**	**Non Farm hh[c]**	**All hh**
Australia	**1989**	239	14211	14450	22503,33	19957,17	19999,28
		(0,95%)	(99,05%)	(100,00%)	(14777,44)	(12880,45)	(12917,60)
	1995	82	6737	6819	13061,07	18502,08	18436,65
		(0,95%)	(99,05%)	(100,00%)	(21393,54)	(12676,17)	(12827,39)
	2001	83	6703	6786	13807,23	20536,94	20454,63
		(0,95%)	(99,05%)	(100,00%)	(15949,94)	(14010,40)	(14053,89)
	2003	97	10113	10210	17213,54	20605,57	20573,34
		(0,95%)	(99,05%)	(100,00%)	(14963,86)	(14429,04)	(14437,21)
	Total	501	37764	38265	16646,29	19900,44	19865,98
		(0,95%)	(99,05%)	(100,00%)	(16771,20)	(13499,02)	(13559,02)
Canada	**1971**	920	25007	25927	13524,22	20320,35	20079,20
		(3,55%)	(96,45%)	(100,00%)	(12510,88)	(14114,59)	(14116,70)
	1975	862	25707	26569	17860,37	17757,07	17760,42
		(3,24%)	(96,76%)	(100,00%)	(16165,74)	(10755,88)	(10972,91)
	1981	531	14605	15136	26192,68	23656,11	23745,10
		(3,51%)	(96,49%)	(100,00%)	(23281,41)	(13940,84)	(14378,00)
	1987	310	10689	10999	19757,87	21049,57	21013,16
		(2,82%)	(97,18%)	(100,00%)	(14241,01)	(11959,58)	(12030,95)
	1991	384	19651	20035	17700,51	21437,98	21366,34
		(1,92%)	(98,08%)	(100,00%)	(13504,92)	(12332,51)	(12366,28)
	1994	554	36921	37475	19086,68	22676,35	22623,28
		(1,48%)	(98,52%)	(100,00%)	(13467,83)	(13198,80)	(13209,74)
	1997	544	33299	33843	21752,49	22572,69	22559,50
		(1,61%)	(98,39%)	(100,00%)	(18823,41)	(14535,71)	(14614,59)
	1998	469	30749	31218	16973,27	23702,99	23601,89
		(1,50%)	(98,50%)	(100,00%)	(13010,64)	(15876,76)	(15858,52)
	2000	413	28557	28970	16640,48	23908,39	23804,78
		(1,43%)	(98,57%)	(100,00%)	(12687,80)	(16234,33)	(16211,96)
	2004	381	27439	27820	20878,66	25912,48	25843,54
		(1,37%)	(98,63%)	(100,00%)	(17703,73)	(17103,72)	(17121,75)
	2007	279	25344	25623	21754,39	28825,79	28748,79
		(1,09%)	(98,91%)	(100,00%)	(16282,23)	(23022,59)	(22971,35)
	Total	5647	277968	283615	19283,78	22892,71	22831,45
		(1,99%)	(98,01%)	(100,00%)	(15699,36)	(15389,19)	(15437,75)
United States	**1974**	604	10871	11475	29218,18	23924,92	24203,54
		(5,26%)	(94,74%)	(100,00%)	(23794,56)	(15869,73)	(16423,85)
	1979	231	14130	14361	22778,66	24327,87	24302,95
		(1,61%)	(98,39%)	(100,00%)	(16670,95)	(14438,67)	(14477,94)
	1986	97	11517	11614	16795,45	26355,05	26275,21
		(0,84%)	(99,16%)	(100,00%)	(16199,24)	(17490,19)	(17500,80)
	1991	429	58609	59038	20065,74	26030,19	25986,84
		(0,73%)	(99,27%)	(100,00%)	(15483,75)	(17683,83)	(17675,97)
	1994	366	56507	56873	21759,81	26958,99	26925,54
		(0,64%)	(99,36%)	(100,00%)	(18792,07)	(19969,88)	(19966,70)
	1997	280	50040	50320	23739,48	29232,10	29201,54
		(0,56%)	(99,44%)	(100,00%)	(24229,17)	(26190,81)	(26183,27)
	2000	240	49393	49633	40204,04	30429,12	30476,38
		(0,48%)	(99,52%)	(100,00%)	(49160,28)	(25655,01)	(25828,16)
	2004	373	76074	76447	31217,20	30696,72	30699,26
		(0,49%)	(99,51%)	(100,00%)	(29160,54)	(27360,96)	(27369,85)
	2007	333	75539	75872	33810,24	31613,55	31623,19
		(0,44%)	(99,56%)	(100,00%)	(29543,13)	(28120,48)	(28127,05)
	2010	308	74880	75188	38512,24	30254,67	30288,49
		(0,41%)	(99,59%)	(100,00%)	(48085,80)	(26300,53)	(26431,12)
	Total	3261	477560	480821	27810,10	27982,32	27998,29
		(0,68%)	(99,32%)	(100,00%)	(27111,95)	(21908,01)	(21998,47)

(a): Adjusted net disposable incomes deflated by the 2005 base Consumer Price Index from the OECD and converted into U.S. dollars by the Purchasing-Power Parity exchange rate for household actual consumption from the OECD.

(b): Farm household (hh) defined according to the 'narrow' definition (see text).

(c): Non farm household (hh) defined according to the 'narrow' definition of a farm household (see text).

Source: LIS

Table 2. Sample size and real net disposable household income (US$/year) for France, Ireland, Italy, and Luxembourg

					Real Net Disposable Household Income (US$/year)[a]		
		Sample Size (%)			Mean (standard deviation)		
Country	**Wave**	**Farm hh[b]**	**Non Farm hh[c]**	**All hh**	**Farm hh[b]**	**Non Farm hh[c]**	**All hh**
France	**1978**	1446	9044	10490	18630,16	21779,55	21345,42
		(13,78%)	(86,22%)	(100,00%)	(18408,86)	(18262,83)	(18314,36)
	1984	273	11302	11575	8088,90	14715,70	14559,40
		(2,36%)	(97,64%)	(100,00%)	(4958,82)	(9418,92)	(9392,16)
	1989	260	8418	8678	11706,46	15691,86	15572,45
		(3,00%)	(97,00%)	(100,00%)	(7771,19)	(10342,24)	(10296,66)
	1994	203	11091	11294	14563,79	18534,83	18463,45
		(1,80%)	(98,20%)	(100,00%)	(9907,69)	(12972,77)	(12934,52)
	2005	474	9766	10240	15125,48	22008,42	21689,81
		(4,63%)	(95,37%)	(100,00%)	(7944,68)	(13785,76)	(13647,59)
	Total	2656	49621	52277	13622,96	18546,07	18326,11
		(5,08%)	(94,92%)	(100,00%)	(9798,25)	(12956,50)	(12917,06)
Ireland	**1987**	395	2899	3294	10889,19	13907,75	13545,78
		(11,99%)	(88,01%)	(100,00%)	(13279,94)	(9824,33)	(10344,21)
	1994	336	2856	3192	21440,67	18409,39	18728,47
		(10,53%)	(89,47%)	(100,00%)	(18027,84)	(26770,79)	(26003,79)
	1995	290	2540	2830	23398,75	18740,93	19218,23
		(10,25%)	(89,75%)	(100,00%)	(16336,73)	(38048,40)	(36449,14)
	1996	259	2383	2642	21649,23	19659,04	19854,14
		(9,80%)	(90,20%)	(100,00%)	(12767,23)	(51390,56)	(48972,08)
	2004	265	5815	6080	17734,50	21559,92	21393,19
		(4,36%)	(95,64%)	(100,00%)	(10003,12)	(18770,65)	(18491,44)
	2007	261	4980	5241	19754,42	23433,75	23250,52
		(4,98%)	(95,02%)	(100,00%)	(12031,99)	(18876,64)	(18611,90)
	2010	136	4186	4322	20217,6	22953,73	22867,63
		(3,15%)	(96,85%)	(100,00%)	(14877,16)	(14766,04)	(14775,54)
	Total	1942	25659	27601	16234,81	17179,30	17161,36
		(7,04%)	(92,96%)	(100,00%)	(11328,02)	(21668,09)	(21092,04)
Italy	**1987**	129	7898	8027	21003,35	22778,55	22750,02
		(1,61%)	(98,39%)	(100,00%)	(21592,84)	(16680,81)	(16770,89)
	1989	132	8142	8274	16158,93	21081,15	21002,63
		(1,60%)	(98,40%)	(100,00%)	(9080,52)	(14363,80)	(14307,79)
	1991	118	8070	8188	18536,27	19425,81	19412,99
		(1,44%)	(98,56%)	(100,00%)	(10629,44)	(12322,72)	(12299,87)
	1993	85	8004	8089	15301,4	17917,47	17889,98
		(1,05%)	(98,95%)	(100,00%)	(11959,48)	(13005,90)	(12997,40)
	1995	91	8044	8135	16010,25	16605,78	16599,12
		(1,12%)	(98,88%)	(100,00%)	(22787,25)	(12331,75)	(12494,80)
	Total	555	40158	40713	17402,04	19561,75	19530,95
		(1,36%)	(98,64%)	(100,00%)	(15209,91)	(13741,00)	(13774,15)
Luxembourg	**1985**	54	1958	2012	20888,28	17222,93	17321,31
		(2,68%)	(97,32%)	(100,00%)	(11663,28)	(7584,28)	(7740,34)
	1991	48	1909	1957	31999,29	28343,41	28433,08
		(2,45%)	(97,55%)	(100,00%)	(18454,36)	(14742,06)	(14849,18)
	1994	42	1771	1813	29901,30	28605,73	28635,74
		(2,32%)	(97,68%)	(100,00%)	(10008,33)	(13632,10)	(13558,43)
	2007	56	3697	3753	39161,72	33373,22	33459,59
		(1,49%)	(98,51%)	(100,00%)	(27280,78)	(28445,50)	(28433,64)
	2010	124	5340	5464	31518,80	31435,45	31437,34
		(2,27%)	(97,73%)	(100,00%)	(32639,51)	(19376,17)	(19771,21)
	Total	354	20682	21036	30693,88	27796,15	27857,41
		(1,68%)	(98,32%)	(100,00%)	(20009,25)	(16756,02)	(16870,56)

(a): Adjusted net disposable incomes deflated by the 2005 base Consumer Price Index from the OECD and converted into U.S. dollars by the Purchasing-Power Parity exchange rate for household actual consumption from the OECD.

(b): Farm household (hh) defined according to the 'narrow' definition (see text).

(c): Non farm household (hh) defined according to the 'narrow' definition of a farm household (see text).

Source: LIS

Table 3. Sample size and real net disposable household income (US$/year) for Finland, Hungary and Norway

					Real Net Disposable Household Income (US$/year)[a]		
		Sample Size (%)			**Mean (standard deviation)**		
Country	**Wave**	**Farm hh[b]**	**Non Farm hh[c]**	**All hh**	**Farm hh[b]**	**Non Farm hh[c]**	**All hh**
Finland	**1991**	843	10906	11749	14091,41	16859,95	16661,31
		(7,18%)	(92,82%)	(100,00%)	(7370,44)	(7772,97)	(7777,37)
	1995	910	8352	9262	15813,39	15513,21	15542,70
		(9,83%)	(90,17%)	(100,00%)	(8686,70)	(8438,53)	(8463,23)
	2000	1164	9259	10423	19855	20432,39	20367,91
		(11,17%)	(88,83%)	(100,00%)	(11953,73)	(34906,11)	(33141,09)
	2004	867	10362	11229	21968,39	22042,49	22036,77
		(7,72%)	(92,28%)	(100,00%)	(15676,60)	(26554,58)	(25877,62)
	2007	382	10090	10472	24150,36	25234,10	25194,57
		(3,65%)	(96,35%)	(100,00%)	(11619,04)	(18498,29)	(18293,62)
	2010	284	9067	9351	23579,22	25375,45	25320,89
		(3,04%)	(96,96%)	(100,00%)	(11578,00)	(27129,25)	(26791,66)
	Total	4450	58036	62486	19909,63	20909,60	20854,03
		(7,12%)	(92,88%)	(100,00%)	(11147,42)	(20549,96)	(20057,43)
Hungary	**1991**	43	1976	2019	34405,63	40207,56	40083,99
		(2,13%)	(97,87%)	(100,00%)	(14023,52)	(26744,54)	(26548,53)
	1994	309	1629	1938	15279,50	23883,59	22511,73
		(15,94%)	(84,06%)	(100,00%)	(7974,48)	(19240,23)	(18198,10)
	1999	491	1436	1927	7198,24	10346,01	9543,95
		(25,48%)	(74,52%)	(100,00%)	(3475,03)	(6798,91)	(6276,58)
	2005	200	1835	2035	7003,54	9588,46	9334,42
		(9,83%)	(90,17%)	(100,00%)	(2557,01)	(7284,92)	(7005,99)
	Total	1043	6876	7919	15971,73	21006,41	20368,52
		(13,17%)	(86,83%)	(100,00%)	(7007,51)	(15017,15)	(14507,30)
Norway	**1986**	145	4830	4975	34954,72	20778,94	21192,11
		(1,64%)	(98,36%)	(100,00%)	(17250,48)	(9071,62)	(9705,55)
	1991	640	7433	8073	22331,59	22712,74	22682,52
		(1,64%)	(98,36%)	(100,00%)	(9127,71)	(13063,04)	(12795,29)
	1995	317	9810	10127	22308	24145,42	24087,9
		(1,64%)	(98,36%)	(100,00%)	(9407,93)	(18974,41)	(18751,58)
	2000	323	12596	12919	24084,75	26999,98	26927,09
		(1,64%)	(98,36%)	(100,00%)	(11584,17)	(31825,41)	(31481,48)
	2004	215	12916	13131	26263,14	28728,95	28688,58
		(1,64%)	(98,36%)	(100,00%)	(16121,94)	(88360,17)	(87658,47)
	Total	1640	47585	49225	25988,44	24673,21	24715,64
		(1,64%)	(98,36%)	(100,00%)	(12698,45)	(32258,93)	(32078,47)

(a): Adjusted net disposable incomes deflated by the 2005 base Consumer Price Index from the OECD and converted into U.S. dollars by the Purchasing-Power Parity exchange rate for household actual consumption from the OECD.

(b): Farm household (hh) defined according to the 'narrow' definition (see text).

(c): Non farm household (hh) defined according to the 'narrow' definition of a farm household (see text).

Source: LIS

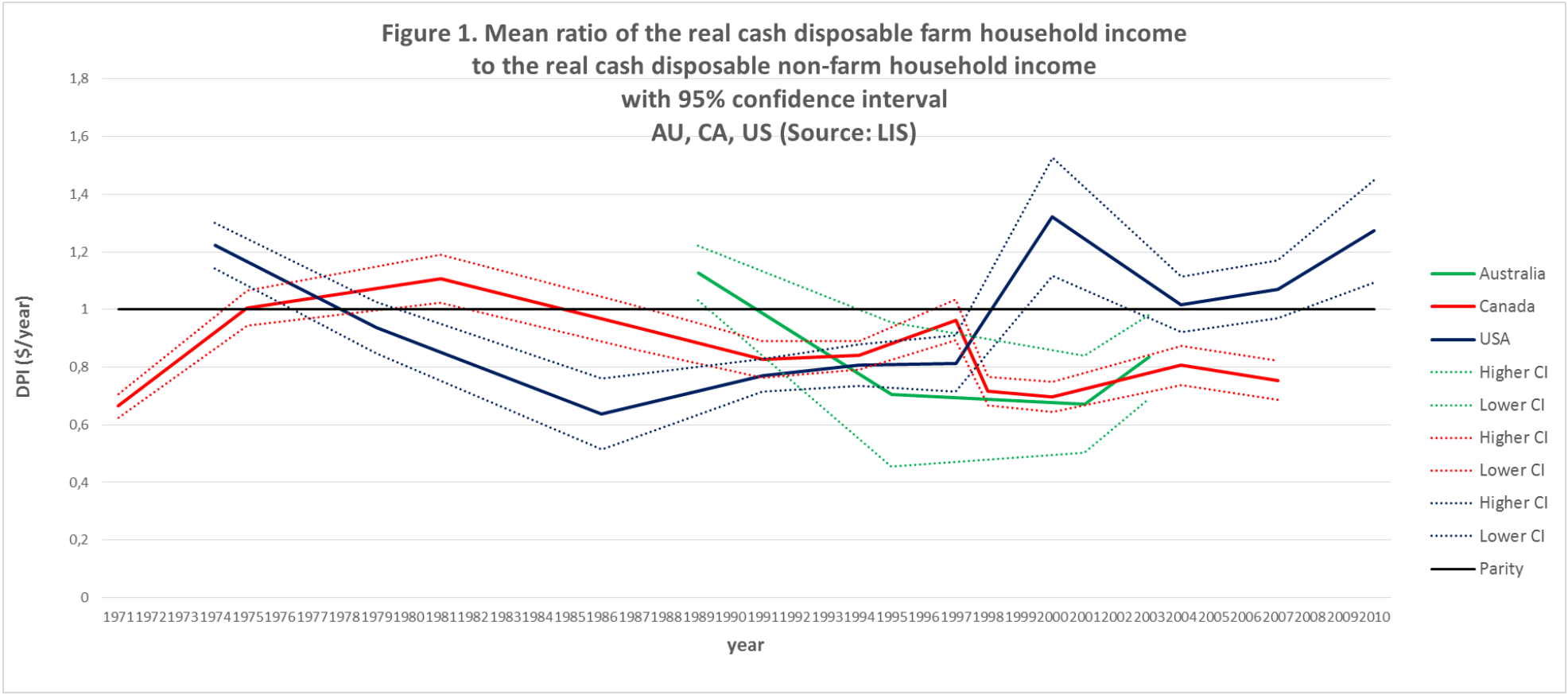
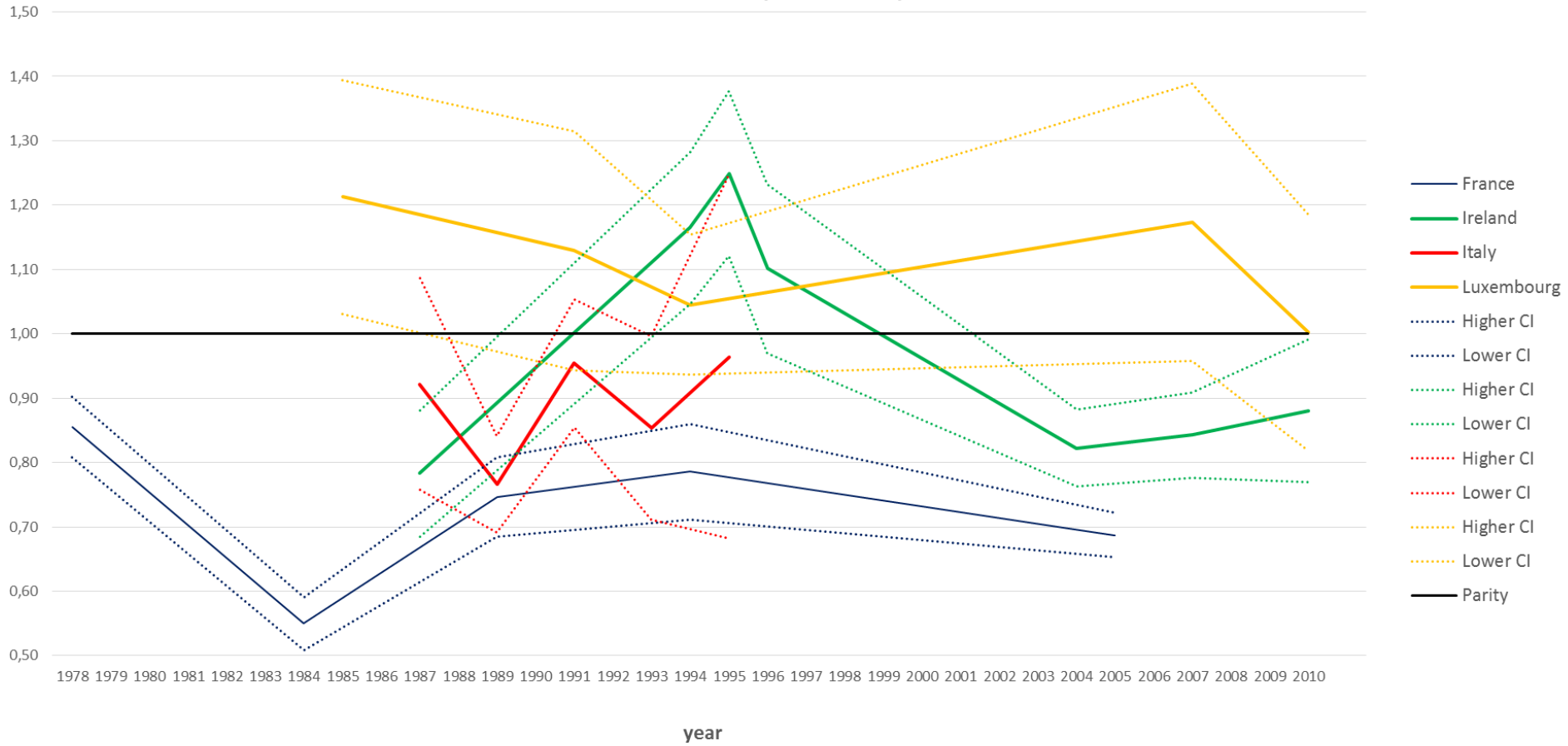


Figure 1. Mean ratio of the real cash disposable farm household income
to the real cash disposable non-farm household income
with 95% confidence interval
AU, CA, US (Source: LIS)
DPI ($/year)
1,8
1,6
1,4
1,2
1
0,8
0,6
0,4
0,2
0
1971 1972 1973 1974 1975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010
year
Australia
Canada
USA
Higher CI
Lower CI
Higher CI
Lower CI
Higher CI
Lower CI
Parity

Figure 2. Mean ratio of the real cash disposable farm household income to the real cash disposable non-farm household income with 95% confidence interval FR, IR, IT, LU (Source: LIS)



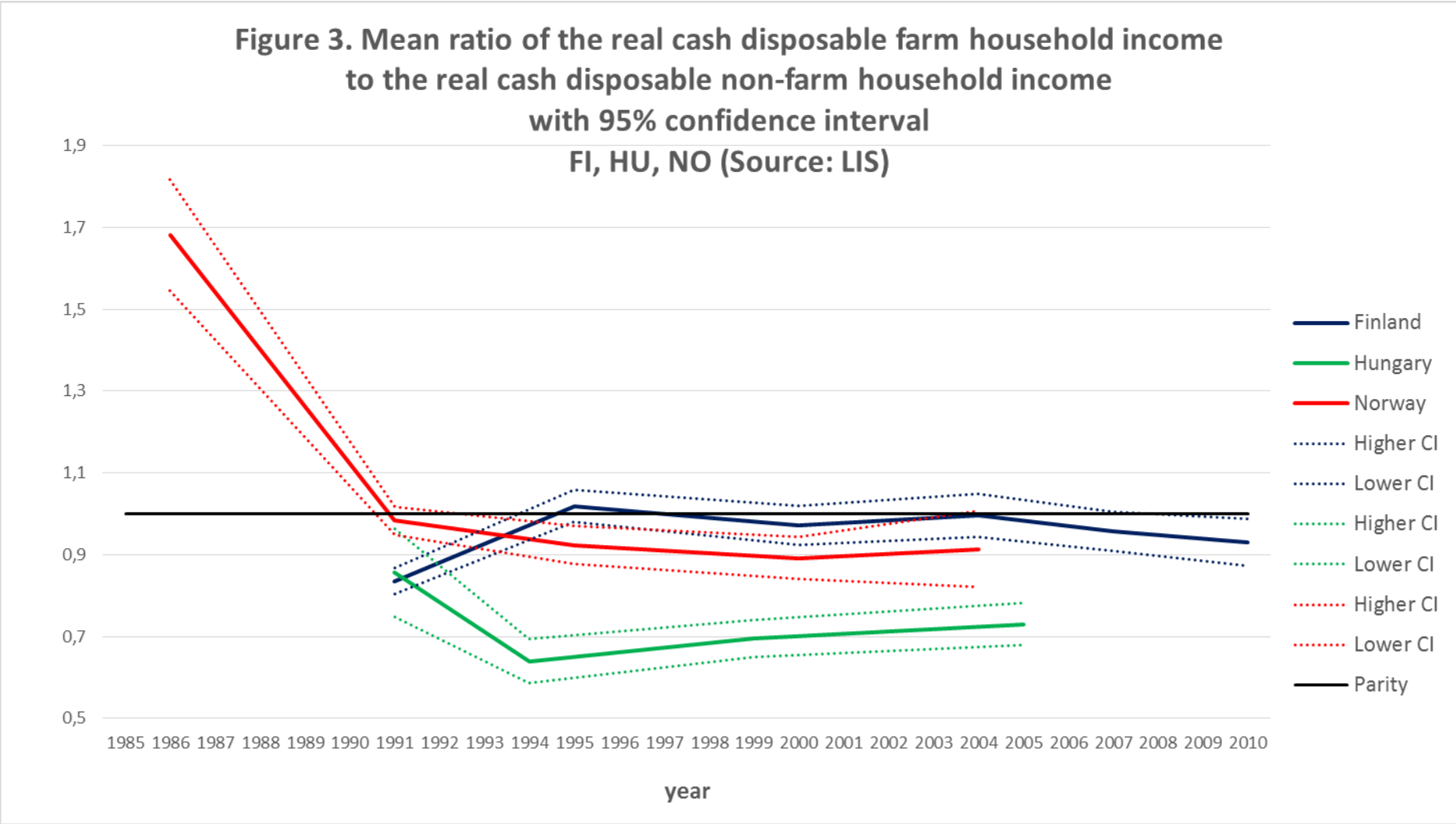


Figure 3. Mean ratio of the real cash disposable farm household income to the real cash disposable non-farm household income with 95% confidence interval FI, HU, NO (Source: LIS)
1,9
1,7
1,5
1,3
1,1
0,9
0,7
0,5
1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010
year
Finland
Hungary
Norway
Higher CI
Lower CI
Higher CI
Lower CI
Higher CI
Lower CI
Parity