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New perspectives on the distribution of farm incomes and the redistributive impact of CAP payments

Laurent Piet (Smart-Lereco, INRAE, France) and **Yann Desjeux** (GREThA, INRAE, France)

We contribute to understanding the impact of potential drivers of farm income inequality and the redistributive impact of Common Agricultural Policy (CAP) payments. Our approach provides information at any quantile of the income distribution, in contrast to the widely used Gini coefficient. Income growth and inequality dynamics of French commercial farms between 2000 and 2017 are found to be explained by a change in both income levels and farm characteristics. Further, CAP payments are shown to participate in levelling off income inequalities, with Pillar 1 and 2 payments performing differently along the distribution. Our results may help inform on-going policy debates about fairness in the distribution of farm support and structural change implications for the future of European agriculture.

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Redistributive payment and the capping of direct payments: Two CAP instruments that work in the favour of small French farms?

Vincent Chatellier (Smart-Lereco, INRAE, France)

Focusing on the case of France, this paper reflects on two Common Agricultural Policy (CAP) instruments that aim to have an impact on the distribution of direct payments among farms. The first, implemented from 2015, is the redistributive payment allocated to farmers for the first 52 hectares of their land. The second involves degressivity and the capping of direct payments, in accordance with the proposals made by the European Commission on June 1, 2018. Using individual data from the Farm Accountancy Data Network (FADN) and several possible implementation modalities for these two instruments, some simulations are carried out to shed light on the impacts of these instruments. The results show the extent to which the level of potential redistribution is affected by the particular options chosen (threshold levels, exemption, targeting of funds collected, and so on).

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CAP and the environment: are the most virtuous farms rewarded?

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The objectives of the CAP, since its creation in the 60's, have been progressively adapted. While continuing supporting farm income, CAP has embedded environmental concerns. Nevertheless, the question remains whether the reforms have allowed for a better distribution of the support according to the stated environmental objectives. Based on the FADN individual data base, we analyse whether, within the specialized dairy cattle and cereals and oilseeds protein farms, between 2002 and 2017, the CAP 1st pillar subsidies have been allocated to farms, which adopt a more environmentally friendly farm management. To do this, we compute individual farm GHG emission levels and use fixed effect panel estimations, with individual and temporal effects, to assess the impact of reforms on aid distribution. We find, for both farm types, that the 2003 reform, while introducing the decoupling and environmental cross-compliance of 1st pillar subsidies, did not immediately favor this redistribution. However, the 2014 reform, with the convergence of payment entitlements and an enhanced greening of payments, has helped to reduce the positive relationship between a strong impact on GHG emissions and a high level of first pillar aid subsidies.

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Farm and non-farm income of French farmers from 2003 to 2016. A new method for matching FADN and tax data

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The principle of parity between the income of farmers and that of other sectors set out in the objectives of the Common Agricultural Policy (CAP), the involvement of non-salaried family labour and the merging/confusion of professional and personal assets have motivated the search for information on farm household income for several decades. Today, the boundary between the private and professional spheres is still moving: in the case of agricultural firms, land assets are often held by the associates, and non-farming activities generate resources that are sometimes declared as agricultural profits and sometimes as commercial profits. But integrating non-farm income into the analysis of farmers' income remains a challenge, given the data available. The tax data used by INSEE to compare the income of agricultural households to those of other sectors are not well suited to economic analyses of income within the agricultural sector. This paper proposes an original method, based on matches between the Farm Accountancy Data Network (Rica) and farmers' income tax returns from 2003 and 2010, to build a micro-economic database of total income from 2003 to 2016, for tax households in which one member works on a commercial farm. After validating this database, the results obtained highlight the high variability of the average farm income and of the overall income of households, which are highly dependent on farm income. They also show the "safety net effect" of a complementary non-agricultural salary for the households concerned.

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The heterogeneity of income of non-salaried workers in French agriculture: a look through two typological grids

Vincent Chatellier (Smart-Lereco, INRAE, France)

The income of non-salaried agricultural workers is at the heart of many debates and analyses concerning the economic trajectory of French farms. According to data from the Farm Accountancy Data Network, the farm income (before tax) per annual work unit (non-salaried AWU) amounted to 29,500 euros (constant 2019 currency) on average over the ten-year period 2010-19. This average, which is subject to strong inter-annual variations depending on the international prices situation and the size of the harvest, masks a very large heterogeneity. To analyse this, two typological grids are proposed in this paper, with the objective that they can be used by producers, public or private, of data on income in agriculture. These two methods are based on the combination of three indicators, namely labour productivity, productive efficiency and debt sustainability. After an analysis of the evolution of the income dispersion of non-salaried AWU over the last ten years, the two methods are presented. An application to the FADN data is then conducted to analyse the distribution of French farms economic results.

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Productivity gains and changes in the profitability of French ruminant farms over 31 years (1988-2018)

Patrick Veyssset (Herbivores, INRAE, France) and **Sanae Boukhriess** (Herbivores, INRAE, France and CIHEAM-IAMM, Université Montpellier, France)

This study analyses the evolution of global factor productivity, the sharing of productivity gains and the profitability of French professional ruminant farms (dairy cattle, beef cattle and small ruminants) over the last 31 years (1988-2018). The continuous increase in labour productivity masks the decline in the productivity of other factors and the decline (or stagnation) in the technical efficiency of production systems. The cumulative economic surplus generated by the farms comes mainly from the public authorities in the form of subsidies, and is mostly captured by the downstream animal and crop production chains in the form of lower producer prices for agricultural products. The profitability of cattle farms (milk and meat) declined while, thanks to public support maintained throughout the period, the profitability of small ruminant farms, which was the lowest at the beginning of the period, improved.

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Capitalization of farm income and formation of professional assets

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We assess how the annual cash flow produced on farms is capitalised as professional assets. Part of the income would indeed be deferred in time and therefore cannot be excluded from the more general analysis of income in agriculture. We study the process of capitalisation of this fraction of wealth based on the annual cash flows and book assets between 2001 and 2018 of 1,538 farms in the departments of Puy-de-Dôme and Haute-Loire. Our results shed light on the processes and strategies for the formation of professional assets, which continue to grow in real terms with a constant agricultural labour force. The internal rates of return (IRR) of the calculated investments are mostly positive and reach an average of 2.3%.

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Redistributive payment: impact of the top-up hectare threshold on targeting beneficiary farms

Laurent Piet (Smart-Lereco, INRAE, France) and **Cathie Laroche-Dupraz** (Smart-Lereco, Agrocampus Ouest, France)

The redistributive payment aims to redistribute direct aid from the CAP first pillar to small farms. It is paid to a maximum number of hectares of each farm, established in France at 52 ha. To analyse the impact of the choice of this threshold on the distribution of aid between farms according to their size, we calculate the amount of the redistributive payment per hectare resulting from both the threshold and the dedicated budget retained, via a Lorenz curve established on the distribution of French farms. Using a simulator calibrated on public microdata from the FADN, we show that to target the redistribution of direct aid per hectare on farms smaller than 52 ha, a much lower top-up hectare threshold should be defined.

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Income indicators on farms in France: a 15-year comparative analysis of FADN and MSA data

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This article presents an analysis of the indicators used to measure the economic performance of farms in France. While the chart of accounts makes it possible to identify the precise method of calculation of various intermediate management balances (including the gross added value, the gross operating surplus and the farm income), the statistical sources used to discuss the level of 'income' of French farmers are diverse and the indicators used are not always homogeneous. This sometimes results in a fragility in the public expression of the notion of farmers' income. By matching two distinct sources of information over fifteen years (2003 to 2017), namely the FADN produced by the Ministry of Agriculture and the database for self-employed contributors (COTNS) of the Caisse Centrale de la Mutualité Sociale Agricole (MSA), this article compares the level of several economic performance indicators. The matching was carried out using the SIRET number of the farms. This analysis highlights several original results: the fiscal 'agricultural profit' (published by the MSA) is lower than the current result before tax (derived from FADN) by one third; the amount of private withdrawals is weakly correlated to the accounting result or to the reported tax income; the heterogeneity observed in income levels depends on structural determinants but also on the strategic choices made by farmers themselves.

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