

The Austrian Program of Rural Development: Effects on Employment and Growth at NUTS-3-Level

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Abstract – The Program of Rural Development (PRD) is one pillar of the Common Agricultural Policy (CAP). In Austria most of the funds of this program are channelled via the agricultural sector into the rural economy. The effects on rural value added and rural employment apart from the agricultural sector are quantified using a new tool-set which harnesses an agricultural sector model and a regional input output model. This approach allows to evaluate the economic consequences of the policy intervention at NUTS-3 level.

INTRODUCTION

In this paper, an ex-ante analysis of the inter- and intra-regional consequences of the PRD in Austrian regional economies is presented. The objective of the analysis is to evaluate the economic consequences of the Programme for Rural Development for rural (PRD) and non-rural regions. Inter-regional spillovers and their impact on the development of the two types of regions are taken into consideration explicitly. Austria is chosen because of the eminent role of this programme for the agricultural sector. Austria accounts for 1.7 % of total agricultural output in EU-27 but will get 4.4% of the total PRD funds until 2013.

There are several general equilibrium models analysing CAP issues which are available at national or EU levels (e.g. GTAP). Most regional models for agricultural policy analyses are either limited to the agricultural sector (e.g. CAPRI) or to a part of the country in which agriculture plays an important role (Psaltopoulos et al., 2006).

Here, a multi-regional input-output model of the whole Austrian economy is presented which captures both, the agricultural sector and agricultural policies in a very detailed manner. The study attempts to evaluate the regional consequences of a rural development policy experiment for the whole country as Kilkenney (1993) did for the US. Kilkenney has used a computable general equilibrium (CGE) model of the US economy. In this case, an econometric model of nine Austrian subregions will be used to aggregate

results on rural and non-rural regions. The most important measures of the PRD are accounted for explicitly and the model is calibrated to data observed during the previous PRD (2000 - 2006).

MEASURING RURAL AND REGIONAL DEVELOPMENT

Rural regions are usually characterized by low population densities and remoteness (see OECD, 2005). The consequences of these characteristics on regional growth have been a topic in the 'regional development' literature. The objectives of policies addressing rural and regional development are the same: high rates of economic growth and employment. Regions with a high growth potential have the ability to attract profitable firms that employ high skilled workers with high incomes. The population in such regions has high living standards and the regional performance can be measured by its GDP and job creation potential. Programs addressing rural viability should aim at fostering such capacities (Gardiner et al., 2004).

The regional GDP and the number of jobs created are well established indicators for the standard of living in a region and changes reveal to what extent a region is adjusting to or affected by a changing environment. Economic growth and employment are therefore the most important horizontal indicators of the evaluation process which are an integral part of the PRD (see Appenix F, DG Agriculture and Rural Development, 2006). Looking at both measures simultaneously is essential.

In Austria the majority of regions have a (nominally) growing primary sector (the majority of diamonds is in quadrant I in the upper right panel of Figure 1). The other two panels (for the secondary and the tertiary sector) show that rural regions benefit because the non-primary sectors expand and are driving regional growth. The development of the secondary sector is particularly strong in rural regions. Some rural regions are among the fastest growing regions. On average, integrated regions are not growing at an equal pace in the secondary sector as the rural regions do. To sum up, growth in rural regions mainly comes from the secondary and the tertiary sector of the economy. Regions with a thriving primary sector are a minority.

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SCENARIO AND ANALYSIS TOOLS

In the policy experiment, the unmodified continuation of the 2000 - 2006 PRD (funds and scope of measures) until 2013 will be the reference scenario (with a budget of EUR 970 millions p.a.). It will be compared with two variants of the new PRD. Ongoing policy changes of the CAP reform of 2003 (relevant for milk) and later reforms (relevant for sugar) are implemented in all scenarios in order to isolate the effects of the new PRD. The measures of the old and new PRD (e.g. support for farms in mountainous regions, for agri-environmental payments and for investments, investment aids) are modelled explicitly.

The evaluation is quantified by the combination of two economic models: PASMA, a regionally differentiated model of the Austrian agricultural sector and MultiREG, a regional input-output model of the whole economy with a detailed sectoral differentiation.

PASMA (positive agricultural sector model of Austria) is a tool that has been developed for policy analysis (Sinabell and Schmid, 2006). It is a formal representation of the Austrian agricultural sector. It is an alternative to single farm models because its results hold for the whole sector, not just a representative number of farms.

MultiREG differentiates between 32 activities and commodities and has been frequently applied for regional impact assessments (Fritz et al., 2005). Agricultural commodities are among the commodities covered by MultiREG, but for the purpose of this study, PASMA, was used to assess the changes of agricultural output and factor demand. MultiREG is a set of modules that are structurally linked together. For each Austrian province input-output tables are integrated in the model; they represent the flows of goods between the sectors of each province. An inter-regional trade matrix represents the flows of goods and services between the provinces; exports and imports to foreign countries are included in this module, as well. Parameters of behavioural equations for consumption, household income, production, employment are based on empirical estimates.

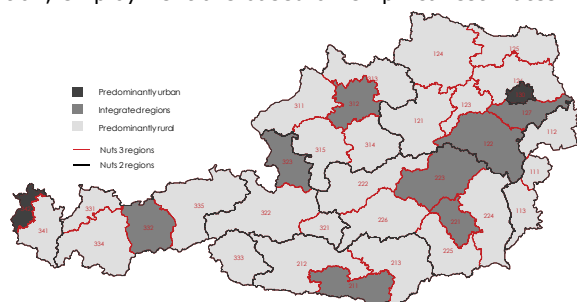


Figure 1. Classification of rural and non-rural regions based on NUTS-3 regions

Source: Bundesanstalt für Agrarwirtschaft, WIFO.

Note: The numbers indicate the NUTS-identifiers.

ANTICIPATED RESULTS

This analysis reports a modelling approach that is capable to evaluate the economic consequences of the PRD for the whole economy and its rural and non-rural regions in a regionally differentiated integrated macro-micro modelling framework. The two

models employed in this study represent the structure of the Austrian economy with respect to the spatial dimension and the sectors that are linked via down-stream and up-stream relations.

In a first attempt, Sinabell et al. 2007 showed that such an approach works. A major limitation of their analysis was that rural and non-rural regions were differentiated only at NUTS-2 level (provinces) which is a very crude approximation to the actual situation. In this analysis, all NUTS-3 regions are represented and the effects on all sectors (primary, secondary and tertiary) in these regions are accounted for (see Figure 1 for a map of Austria with borders of NUTS-3 regions).

The model results show that rural regions benefit more than non-rural ones. Approximately two thirds of additional employment and value added will go to the rural economy.

But the major finding of the model analysis is that support for the agricultural sector induces significant effects throughout the whole economy. Even if the major share of programme funds is spent in rural regions, non-rural regions are affected as well because of strong spillover effects.

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REFERENCES

- Gardiner, B., R. Martin and Tyler, P. (2004). Competitiveness, productivity and economic growth across the European regions. *Regional Studies*, Vol. 38.9, 1045-1067.
- Kilkenny, M. (1993) Rural/Urban Effects of Terminating Farm Subsidies. In: *American Journal of Agricultural Economics*, 75 (4), November 1993: pp. 968-80.
- OECD (2005). *Regions at a glance*. OECD, Paris.
- Psaltopoulos, D., Balamou, E. and Thomson, K.J. (2006A). Rural-Urban Impacts of CAP Measures in Greece: An Inter-regional SAM Approach. In: *Journal of Agricultural Economics*, 57 (3), September 2006: pp. 441-58.
- Psaltopoulos, D., Balamou, E. and Thomson, K.J. (2006B). Agro-food Linkages in Rural Areas: An Empirical Evaluation of Integrated Development Programs, in: D. Diakasavvas (ed.), *Coherence of Agricultural and Rural Development Policies*, pp 141-152.
- Sinabell, F. and Schmid, E. (2006). Entwicklungen in der österreichischen Landwirtschaft bis 2013. In: *WIFO-Monatsbericht* (2) 2006: 121-135.
- Sinabell, F., Streicher, G., Schmid, E. and Fritz, O. (2007). Ökonomische Wirkungen des Programms der ländlichen Entwicklung in ländlichen und nicht-ländlichen Regionen in Österreich. 47. Jahrestagung der Gesellschaft für Wirtschafts- und Sozialwissenschaften des Landbaues e.V. 17. Jahrestagung der Österreichischen Gesellschaft für Agrarökonomie, 27. September 2007 an der TU-München/Weihenstephan.