

**PRODUCTION FUNCTION ANALYSIS
OF THE EXTENSIVE LIVESTOCK
INDUSTRY IN MONGOLIA**

A dissertation submitted in partial fulfilment
of the requirements for the degree of Master of
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by

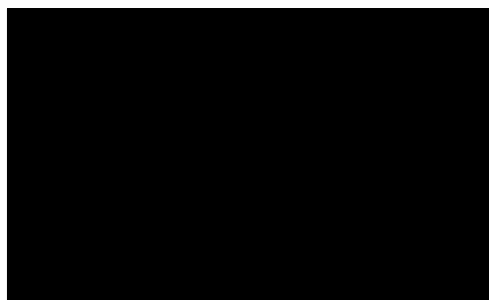
Ayurzana Enkh-Amgalan

July, 1997.

Declaration

I certify that the substance of this dissertation has not already been submitted for any degree and is not currently being submitted for any other degree.

I certify that, to the best of my knowledge, any help received in preparing this dissertation, and all sources used, have been acknowledged.



Ayurzana Enkh-Amgalan

Date: 17.07.97

Abstract

As Mongolia began the transition to a market oriented economy in 1990-1991, traditional livestock production faced serious changes. There is evidence that productivity of the sector might be falling through a less utilisation of some important technological inputs such as supplementary fodder and veterinary services. In this respect, the question of whether the intensification process undertaken from the 1960's to 1980s led to productivity gains in livestock production is quite interesting and entails serious policy implications.

This study is aimed at specifying livestock production functions adequate to describe specific conditions in Mongolia and analysing productivity changes in the Mongolian extensive livestock sector in the socialist period, 1969 to 1990. The weather-dependent and low productive nature of production dictated the use of some individual approach to specifying production functions. First, the natural growth rate (NGR) of animals was used as a measure of output and basic indicator of performance of extensive livestock production. Second, a two-stage estimation procedure was used to analyse first the impact of weather on production and then the impact of economic inputs on weather-adjusted output.

The findings of the study suggested that (i) in addition to weather, the main factors determining output were capital, supplementary fodder and the share of private animals for cattle, and capital and supplementary fodder for small stock. The problem of pasture shortage was more serious for cattle than for small stock; (ii) technical change was significant at an increasing rate in the cattle industry, however, it was not significant in the small stock industry; (iii) intensification of production, or increased application of technological inputs per animal, led to an increase in the natural growth rate (NGR) of animals; (iv) the contribution of technical change and the intensification of production to the total growth in the NGR of animals varied across agro-ecological regions and over time. These results led to important policy discussions concerning ways to improve productivity of the cattle and sheep-goat industry.

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