The Impact of Meat Self-Sufficiency Ratio on GDP

An analysis on nine Latin American Countries
Introduction

1. The role of livestock

- Animal-source foods are one of the best sources of protein and nutrients
- Helps poor children to grow healthily
- Provides income and employment

→ Having domestic access to meat should have a positive impact on GDP
Introduction

How do we measure domestic access?

**Food Self-Sufficiency Ratio**

Food self-sufficiency ratio expresses the magnitude of production in relation to domestic utilization. It can be calculated by the following formula (FAO, 2001):

\[
\frac{\text{Production}}{\text{Production} + \text{Imports} - \text{Exports}} \times 100
\]
Introduction

- Meat Industry in Latin America
  → A big feature in all Latin American countries
Introduction

Objective and Value-Added

- To examine the impact of meat self-sufficiency ratio on GDP in nine middle-income Latin American countries from years 1996-2011
- No other works directly studying the relationship between food self-sufficiency and GDP and also very few works focusing on food self-sufficiency in general
Model and Method

\[ GDP_{it} = b_0 + b_1 ME_{it} + b_2 ODA_A_{i(t-1)} + b_3 FDI_P_{i(t-1)} + b_4 MSSR. \]

GDP: Growth domestic product per capita
ME: Meat exports, per capita
ODA_A: Official development assistance in agriculture, per capita
FDI_P: Foreign direct investment in the primary sector, per capita
MSSR: Meat self-sufficiency ratio
i: country
t: time
## Expected Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
<th>Expected Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>GDP per capita (current US$)</td>
<td>N/A</td>
</tr>
<tr>
<td>ME</td>
<td>Meat Exports per capita (1000 tonnes)</td>
<td>+</td>
</tr>
<tr>
<td>ODA_A</td>
<td>ODA in the agricultural sector per capita (current US million $)</td>
<td>+/-</td>
</tr>
<tr>
<td>FDI_A</td>
<td>FDI in the primary sector per capita</td>
<td>+</td>
</tr>
<tr>
<td>MSSR</td>
<td>Meat Self-Sufficiency Ratio per capita</td>
<td>+</td>
</tr>
</tbody>
</table>
# Results

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat exports*</td>
<td>+</td>
<td>+</td>
<td>Somewhat +</td>
</tr>
<tr>
<td>ODA in agriculture*</td>
<td>-</td>
<td>-</td>
<td>Insignificant</td>
</tr>
<tr>
<td>FDI in primary sector*</td>
<td>+</td>
<td>Somewhat +</td>
<td>+</td>
</tr>
<tr>
<td>Meat self-sufficiency ratio</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*per capita
Conclusion

- Although Latin American countries have a high meat self-sufficiency ratio, they lack the successful implementation of governmental programs and policies/efficient production system.
- FDI and Exports have a positive impact on GDP.
- ODA does not necessarily have a positive impact on GDP.
Suggestions for Further Research

Other aspects that should be taken into consideration:

- Government expenditure in agriculture
- Political situation
- Inflation
- Food prices
- Freedom of trade/tariffs
- Longer time period
- Type of meat produced in each country
References

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• Mallampally, P., Sauvant, K.P. (1999) Foreign Direct Investment in Developing Countries. IMF
• Meade, B., Muhammad, A. and Rada, N. (2011) Income Growth in Developing Countries Can Increase U.S. Agricultural Exports. USDA.


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