

ANALYZING EMPLOYMENT EFFECTS OF ECONOMIC POLICIES: INPUT/OUTPUT AND RELATED MODELS

Lessons from 'employment targeting'
studies in sub-Saharan Africa

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CHALLENGES TO EVALUATING EMPLOYMENT OUTCOME IN DEVELOPING COUNTRIES

- ◉ Lack of comparable employment data over time.
 - May not be able to evaluate employment outcomes using standard statistical techniques.
 - Creates a need to find an alternative method for EMPIRICALLY evaluating policy choices.
- ◉ Input/output analysis provides one starting point
 - Basic data often developed in conjunction with national accounts
 - Can be combined with labor force/household survey data for employment analysis.

WHAT IS AN INPUT/OUTPUT MODEL AND WHY MIGHT IT BE USEFUL?

- ◉ Input/output tables represent an accounting framework to describe production and flows of goods and services between sectors of the economy.
- ◉ Can be linked to macroeconomic aggregates: consumer demand, exports, investment, government purchases, etc.
- ◉ There are many potential uses:
 - Calculate output and employment multipliers to prioritize areas with employment generation potential.
 - Evaluate policy scenarios with regard to employment
 - Understand linkages between sectors/industrial structure.

WHAT ARE THE DATA NEEDS TO USE THIS METHODOLOGY?

- ◉ A set of input/output tables (or supply/use tables) is a necessary starting point.
 - Potential problem: have the tables been updated or are they out of date?
- ◉ Most input/output models ARE NOT linked to employment data. Therefore, data on employment by sector is needed.
 - Sources: labor force surveys, multi-purpose household surveys, enterprise surveys.

EVALUATING EMPLOYMENT OUTCOMES IN A DEVELOPING COUNTRY CONTEXT

- ◉ Common use of input/output analysis: employment multipliers
 - # of jobs generated due to a change in demand for output.
- ◉ May not be applicable to developing countries
 - Widespread informality, self-employment.
 - Underemployment may not be characterized by a lack of jobs.
 - More demand for output may increase number of hours worked
 - Policy changes may affect earnings/value-added instead of aggregate employment numbers
 - Before using an I-O model, there is a need to understand the structure of employment.

EXAMPLE: MADAGASCAR

- ◉ ILO directed project. Employment-targeting policies for Madagascar.
- ◉ Not sufficient data to analyze detailed dynamics over time.
- ◉ However, Madagascar does have input/output tables and employment data from household surveys.
- ◉ Madagascar is a low-income country: high levels of agricultural employment & self-employment

OVERVIEW OF LABOR FORCE

Labor force status	Male	Female	Total
inactive	10.6%	15.4%	13.1%
unemployed	1.6%	3.0%	2.3%
paid manager	1.7%	0.8%	1.2%
paid employee	13.6%	8.7%	11.1%
own-account worker	50.4%	14.5%	32.0%
contributing family	22.1%	57.7%	40.4%
Total	100.0%	100.0%	100.0%

Sector	Output Multiplier (millions Ariary)	Value-Added Multiplier (millions Ariary)	Wage Employment Multiplier (full time equiv.)	Non-Ag Wage Employment Multiplier (full time equiv.)
Agriculture	3.4	2.0	310	150
Livestock and hunting	3.6	1.8	247	134
Forestry	3.4	2.1	252	199
Fishing	3.4	2.0	253	204
Extractive industries	3.5	1.8	384	340
Food processing	3.5	1.5	220	139
Tobacco	3.1	1.3	232	194
Garments and textiles	3.0	1.3	436	403
Wood products	3.6	1.5	397	359
Paper products	1.8	0.3	268	261
Chemicals	2.8	1.3	203	167
Rubber and plastic products	2.8	1.2	238	207
Construction materials	3.4	1.9	294	246
Metal and stone work	2.2	0.8	189	168
Machinery and equipment	3.6	1.8	320	274
Other manufacturing	3.3	1.7	283	241
Energy	2.3	0.7	311	295
Construction and building	3.0	1.4	208	174
Trade	3.5	2.0	278	227
Hotel and restaurant	3.5	1.3	289	236
Transportation	3.3	1.6	279	238
Communication	3.9	2.0	515	465
Finance	3.8	2.0	329	280
Insurance	3.8	1.9	318	271
Business services	3.9	1.9	507	458
Administrative services	3.4	1.9	427	379
Education	3.4	1.8	428	381
Health	3.4	1.7	426	382
Social services	3.3	1.9	394	347
Recreation and culture	3.7	1.9	467	417
Other services	2.5	1.1	329	301

EXTENSIONS OF I-O MODELS

- ◉ Social accounting matrices
 - Include other economic and social sectors
 - For example, government and households
- ◉ Computable general equilibrium models (CGEs)
 - Often built on a 'core' I-O model
 - Adds macroeconomic equilibrium conditions, behavioral equations, price dynamics, etc.
 - Complexity is not always a virtue - sensitive to the various assumptions made.
 - Nevertheless, useful extension for thinking through policy impacts.

LIMITS OF I-O MODELS

- ◉ Can be very useful, but primarily as a guide to help explore economic relationships
- ◉ Basic I-O models are static models.
- ◉ They are focused on the demand-side (but supply side constraints are important)
- ◉ They implicitly incorporate simple assumptions about technology and prices.
- ◉ Caution in using such models for forecasting is warranted.
- ◉ But they can be used to identify policy priorities, particularly in the context of employment-targeting.
- ◉ Represent a complement to, not a substitute for, other economic analysis.