SAM Multiplier and its Application to Total Poverty Gap

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Social Accounting Matrix (SAM) Multiplier and its Application to Total Poverty Gap (TPG)

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Abstract

The purpose of this study was to present an application of SAM multiplier to Total Poverty Gap using simulation and speculation method. Also, an appropriate trade policy was derived in each region aimed at reducing poverty. The results revealed that income level and exogenous macroeconomic shock were an important factor in getting the poor out of destitution. Moreover, to reduce poverty, meat sector should be strongly supported to be exported commodity in North America, Latin America, and EU25. Additionally, processed food sector should be encouraged in Oceania, Southeast Asia, and South Asia. Light manufacturing products should be promoted in East Asia and Sub-Saharan Africa. And Middle East and North Africa can reduce its poverty through an increase in heavy manufacturing sector.

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Background and Introduction

The standard measurement in poverty was widely understood as poverty rate (the proportion of the poor to total population) and it was accepted by many economist, especially a group of economist from the World Bank. Poverty rate can be defined from poverty line. There are two types of poverty line including international poverty line (the same amount of income level to measure people around the world) or national poverty line (normally the average income level in each country). However, international poverty line was more widely used, especially the economist from world bank, for example, Ravallion & Chen (2008). But there were a problem in using international poverty line at, for example $1.25 or $2 per day. It is such low that there is no the poor in many developed countries, for example the U.S., the U.K., Germany, Japan, Australia, and France. It does not present those social conditions in reality. Of course, even the U.S., there is the poor but it is dependent on how you define being poor (absolute or relative poor).

For national poverty line, the problem arises when you would like to compare with other country. The poor who lived in the U.S. , no need to say, live under the different condition with the poor who lived in Uganda. A different currency could make an unclear picture as well. To convert currency, it is able to lead to bias in selecting the period because a depreciation of any currency to the U.S. dollar make those income level higher). Also, the data collection is main problem. Poverty measured by national poverty is always conducted by national statistical office. The quality of statisticians is also important because it means the result is derived from different technique in statistics. Additionally, different questionnaire or the respondents in getting information is the most critical in both national poverty line or international poverty line.

With poverty line, it tells us nothing about the severity of the poor. Suppose that poverty rate in country A is 2.5% while country B is 2.5%. Destitution in both country is likely to be similar because 2.5 % of total population lived under poverty. However, supposed poverty line is at $100 per month. Average income level in country A is $98 while $40 in country B. The question is "Is living standard of citizen still the same between country A and B ?". Of course, not. Poverty line don't give us a clear picture of living standard. In 1976, Sen proposed the idea of the depth of poverty which was further understood as Total Poverty GAP (TPG). TPG shows us how far the poor is from getting out of poverty. It gives us the amount of poverty required to add to individual. Depth of poverty is definitely displayed by this measurement.

When poverty is related to socio-economic dimension, there were many strands of knowledge aimed at understanding this problem. The most popular technique was econometric method to derive the relationship between economic growth and poverty called the economic growth elasticity of poverty (GEP) through log-linear regression model, for example, Squire (1993), Ravallion & Chen (1996), Kalwij & Verschoor (2004), Perrotta (2007), Takeda (2009). However, the development of Social Accounting Matrix (SAM) framework representing the transactions among economic agents (Miller & Blair, 2009) through Computable General Equilibrium (CGE) model helps economist understand more about the poverty. For example, the paper of Thorbecke & jung (1996), Klan (1999), Essama-Nssah (2005), Civardi & Lenti (2008). For SAM, the most critical thing is about its multiplier. Round (2003) explained that SAM multiplier described the possible effects of shocks on economy. Also, Thaiprasert (2006) stated that the high multiplier represented the promise to economy and government or institution should support the sector yielded the high

multiplier. Then, aimed at fulfilling the existing strand of knowledge, the research question is about how can the depth of poverty was understood through SAM multiplier.

Objective

The purpose of this study was to bridge socio-economic framework with economy-wide analysis through the model presenting the relationship between Social Accounting Matrix (SAM) multiplier and Total Poverty Gap (TPG), to present SAM multiplier in every region around the world, and simulate the effect of exogenous macroeconomic shock on poverty in each region.

Author's Model Specification

According to SAM multiplier's (Pyatt & Round, 1979),

$$dy = mdx$$

where m is Social Accounting Matrix, dx is exogenous macroeconomic shock, and dy is a change in household income.

However,

$$\Delta y = Y_1 - Y_o$$

$$dy = Y_1 - Y_o$$

Rearrange,

$$dy + Y_0 = Y_1$$

Then,

$$mdx + Y_0 = Y_1 \qquad (1)$$

From Total Poverty Gap (TPG) (Sen, 1976), it represents the dept or severity of poverty. It can tell us how much money people need in getting out of poverty. Its formula was written as,

$$TPG = \sum_{i=1}^{n} (Y_p - Y_i)$$

A change in TPG,

$$\Delta TPG = \sum_{i=1}^{n} (Y_p - Y_{i+1})$$

or individually,

$$\Delta TPG = Y_p - Y_1 \qquad (2)$$

Y_i should be hold constant in order to consider how much a change in the depth of poverty. Y_1 is new income level.

Substitute (1) in (2), we will get

$$\Delta TPG = Y_p - (mdx + Y_0) \qquad (3)$$

According to this formula (3), it would be implemented that the eradication of poverty requires an action (exogenous shock) and increase in income level. An increase in income level and exogenous macroeconomic shock can reduce the depth of poverty.

Data

Social Accounting Matrix (SAM) multiplier was derived by GTAP database. There are 10 regions in consideration including Oceania (Australia, New Zealand, Rest of Oceania); East Asia (Hong Kong, China, Japan, Korea, Mongolia, Taiwan, Rest of East Asia); South East Asia (Cambodia, Indonesia, Lao, Malaysia, Philippines, Singapore, Thailand, Vietnam, Rest of South East Asia); South Asia (Bangladesh, India, Nepal, Pakistan, Sri Lanka, Rest of South Asia); North America (Canada, U.S., Mexico, Rest of North America); Latin America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Rest of South America, Costa Rica, Guatemala, Honduras, Nicaragua, Panama, El Salvador, Rest of Central America, Caribbean); Europe 25 (Australia, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom); Middle East and North Africa (Egypt, Morocco, Tunisia, Rest of Western Asia, Rest of North Africa); Sub-Saharan Africa (Benin, Burkina Fuso, Cameron, C d'Ivoire, Ghana, Guinea, Nigeria, Senegal, Togo, Rest of Western Africa, Central Africa, South Central Africa, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Tanzania, Uganda, Zambia, Zimbabwe, Rest of Eastern Africa, Botswana, Namibia, South Africa, Rest of South African Customs); Rest of the World (Switzerland, Norway, Rest of EFTA, Albania, Bulgaria, Belarus, Croatia, Romania, Russian Federation, Ukraine, Rest of Eastern Europe, Kazakhstan, Kyrgyzstan, Rest of Former Soviet Union, Armenia, Azerbaijan, Georgia, Bahrain, Iran, Israel, Kuwait, Omar, Qatar, Saudi Arabia, Turkey, United Arab Emirates, Rest of the World).

For commodity sector, there are 10 sectors including grain (grains and crops), meat (livestock and meat products), extract (mining and extraction), processed foods (processed foods), textile (textile and clothing), light manufacturing (light manufacturing), heavy manufacturing (heavy manufacturing), Utilities (utilities and construction), transportation (transports and communication), other services (other services). There are 5 production factors including unskilled labor, skilled labor, land, capital, and natural resources.

SAM multiplier was derived through SAM decomposition method from Pyatt & Round (1979).

Results

Main tool in this paper was mathematical simulation using the model derived by me and real SAM multiplier. The effects on Total Poverty Gap (TPG) was described by each scenario. For the most simple case, SAM multiplier was given to 3.6, initial income was ฿ 1,400, Poverty line was at ฿1,500 (฿ was Thai currency). The simple simulation was shown by table 1.

Table1: Scenario with application

	Scenario			
	I	II	III	IV
SAM Multiplier	3.6	3.6	3.6	3.6
Poverty Rate	1500	1500	1500	1500
Income Level	1400	1403.6	1420	1423.6
TPG	100	96.4	80	76.4

Source: Author's own calculation

For the first scenario displayed in table 1, poverty rate was hold at $1,500 and Income level was $1,400. So, TPG was 100. In this case, income level is not limited to only individual level but it was able to sum as regional income level. For the second scenario, SAM multiplier was implemented to the model, shock was fixed to 1, and income level was the same level ($1,400). In this second case, result from exogenous shock through an increase in export in given sector, household income was increased from $1,400 to $1,403.6. Thus, TPG decreased from 100 to 96.4.

For third scenario, there was an increase in household income (may be from annual bonus), his or her income increased from $1,400 to $1,420. In this case, there was no shock implemented. TPG remained 80. The effect on TPG was dependent on how much increase in household income. For the last case, there was an increase in household income ($20 increased) and shock increase in given sector (Multiplier = 3.6). TPG was reduced to 76.4. Thus, it would be clear that a decrease in TPG was relied basically on an increase in income and exogenous macroeconomic shock.

The higher SAM multiplier is, the shallower poverty is. The more income increase, the more poverty can be eradicated.

After exploring a simple simulation, the next is to consider SAM multiplier in reality. For SAM multiplier, it included the direct effect, indirect effect, and induced effect. SAM multiplier can be classified into three types including Output Multiplier, GDP Multiplier, and Income Multiplier. In this study, only output multiplier was in consideration because the definition of exogenous demanded shock was given to be an increase in export. When there is an increase in export, the economy was stirred. Active labor was more demanded by firm. Wage normally go up so as to attract the labor. When labors get more income, they spend more and induce consumption effect to economy in return. For output multiplier in all regions, it was shown in table 2 as following,

Table 2: Output multiplier for all regions

Region	Grain	Meat	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other
Oceania	3.63	4.29	3.16	4.63	4.24	3.91	4.17	4.38	3.77	3.28
East Asia	3.57	4.54	3.78	4.54	5.07	5.11	4.64	4.46	3.65	3.36
SE Asia	3.11	4.05	2.52	4.08	3.52	3.46	3.32	3.68	3.29	3.02
South Asia	3.39	3.25	2.79	4.45	4.30	3.94	3.79	3.71	3.11	2.61
North America	3.40	4.93	2.93	4.19	4.03	3.85	3.79	3.54	3.26	3.00
Latin America	3.33	4.42	3.06	4.39	3.74	3.88	3.98	3.36	3.25	2.85
Eu25	2.88	3.90	2.98	3.83	3.45	3.55	3.35	3.46	3.55	3.00
MENA	2.93	3.54	2.70	3.57	3.39	3.40	3.94	3.56	2.98	2.95
SSA	2.64	3.76	2.69	3.99	3.94	4.09	3.86	3.67	3.21	3.07
ROW	2.96	4.08	2.51	3.93	3.33	3.37	3.62	3.49	3.14	2.83

Source: Author's own calculation

Notes: Grain stands for grains, meat stands for meats, extr stands for extraction, pro.fd stands for processed food, text stands for textile, l.mfg stands for light manufacturing, h.mfg stands for heavy manufacturing, u.con stands for utilities, tran.c stands for transportation, and other stands for other services.

According to the table 2, highest output multiplier in Oceania was in processed foods sector (4.6274) while the lowest output multiplier was in extraction sector (3.1561). For East Asia, highest multiplier was in light manufacturing sector (5.1064) while the lowest output multiplier sector was in other sector (3.3578). For Southeast Asia, the highest output multiplier was in processed food sector (4.0783) while the lowest output multiplier was in extraction sector (2.5199). For South Asia, the highest output multiplier was in processed food sector (4.4509) while the lowest output multiplier was in other sector (2.6099). For North America, the highest output multiplier was in meat sector (4.9339) while the lowest output multiplier was in extraction sector (2.9315). For Latin America, the highest output

multiplier was in meat sector (4.4205) while the lowest output multiplier was in other sector (2.8549). For Europe 25, the highest output multiplier was in meat sector (3.8972) while the lowest output multiplier was in grain sector (2.8837). For Middle East and North Africa, highest output multiplier was in heavy manufacturing sector (3.9373) while the lowest output multiplier was in extraction sector (2.7006). For Sub-Saharan Africa, the highest output multiplier was in light manufacturing sector (4.0880) while the lowest output multiplier was in grain sector (2.6431). For rest of the world, highest output multiplier was in meat sector (4.0785) while the lowest output multiplier was in extraction sector (2.5074).

SAM multiplier was used to simulate the effect on poverty according to the expression (3). An increase in export was assumed to be identical to all sector equal to 1. Initial income of all individuals was 100 in order to see the sensible changes on Total Poverty Gap. The result was quite impressive and shown in table 3 as following,

Table 3: Simulation of SAM multiplier and Changes in Total Poverty GAP

	Grain	Meat.	Extr	Pro.fd	Text	L.mfg	H.mfg	U.con	Tran.c	Other
Multiplier	3.6265	4.2890	3.1561	4.6274	4.2394	3.9083	4.1747	4.3774	3.7718	3.2772
Income Level	100	100	100	100	100	100	100	100	100	100
Poverty Line	150	150	150	150	150	150	150	150	150	150
Initial TPG	50	50	50	50	50	50	50	50	50	50
△ in TPG of OCN	46.3735	45.7110	46.8439	45.3726	45.7606	46.0917	45.8253	45.6226	46.2282	46.7228
△ in TPG of EA	46.4329	45.4618	46.2158	45.4574	44.9295	44.8936	45.3614	45.5429	46.3512	46.6422
△ in TPG of SEA	46.8923	45.9497	47.4801	45.9217	46.4831	46.5415	46.6779	46.3203	46.7105	46.9821
△ in TPG of SA	46.6126	46.7541	47.2150	45.5491	45.7016	46.0569	46.2138	46.2861	46.8867	47.3901
△ in TPG of NA	46.6005	45.0661	47.0685	45.8130	45.9660	46.1532	46.2142	46.4563	46.7392	46.9965
△ in TPG of LA	46.6705	45.5795	46.9427	45.6120	46.2611	46.1192	46.0216	46.6407	46.7476	47.1451
△ in TPG of EU25	47.1163	46.1028	47.0206	46.1712	46.5517	46.4523	46.6450	46.5450	46.4479	46.9953
△ in TPG of MENA	47.0653	46.4633	47.2994	46.4292	46.6073	46.5982	46.0626	46.4351	47.0231	47.0485
△ in TPG of SSA	47.3569	46.2437	47.3086	46.0078	46.0640	45.9120	46.1388	46.3317	46.7904	46.9340
△ in TPG of ROW	47.0446	45.9215	47.4926	46.0742	46.6682	46.6342	46.3791	46.5094	46.8599	47.1657

Source: Author's own calculation

Note: OCN stands for Oceania, EA stands for East Asia, SEA stands for Southeast Asia, SA stands for South Asia, NA stands for North America, LA stands for Latin America, Eu25 stands for Europe 25, MENA stands for Middle East and North Africa, SSA stands for Sub-Saharan Africa, and ROW stands for rest of the world. / Orange Area presents the sector that any shocks in that sector yields the largest effect on poverty reduction. So, region should promote this sector aimed at reducing poverty. Blue area is the least beneficial sector in eradicating poverty.

According to table 3, the results revealed that an increase in export in meat sector is the best strategy to reduce the depth of poverty (money required to get out of being poor) in North America, Latin America, EU25, and Rest of the World. Then, those region should increasingly encourage this sector due to its strong linkages throughout the economy. Also, an increase in export of processed foods can be most successful tool to reduce poverty in Oceania, Southeast Asia, North America. Commodity from light manufacturing should be exported more in East Asia and Sub-Saharan Arica in helping raising citizen's income. Moreover, Middle East and North Africa should export more in heavy manufacturing product to take the poor out of the indigence. So, government should support the sector that is able to effectively poverty.

Nevertheless, the wrong trade policy can make people worse off. Due to the small linkage to economy, any expansion in some sector does not impressively improve citizen's living standard. For the goals of solving poverty, government in Oceania, Southeast Asia, North America, Middle East and North Africa, and Rest of the would should not support an increase in production in extraction sector by populism policy or market intervention. Due partly to artificial incentive among people in this sector, an increment in production in this sector does not yield much effect on economy. Also, other sector should not be encourage in East Asia, South Asia, and Latin America. Additionally, the product from grain sector should not be support for exporting in EU and Sub-Saharan Africa due to least linkages.

As you have seen, each region has own strategy. What should be encouraged depends on the magnitude of SAM multiplier representing the linkage throughout the economy.

Conclusion

Poverty reduction is international goals by UNDP. Halving poverty is government's duty in issuing the policy suitable for its own economic condition. With strong economic relationship through international trade, a proper trade strategy can be a motivator in eradicating of poverty. An appropriate trade policy is able to derive from the economic linkage to economy. Unfortunately, there was no single answer for every region due to economic characteristics. Even though the result from this study may be against the stylized Heckscher-Ohlin Theorem, remember that the aim of H-O model was to find the best strategy to export and import the commodity so as to lead country to prosperity (Yarbrough & Yarbrough, 2006) but this study was trying to find the best strategy in reducing poverty. Thus, from the result of this study, poverty can be reduced through an increase in export in the sector that have high output multiplier.

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Appendix : SAM Multiplier in Each Region

Oceania

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.2804	0.1386	0.0051	0.2550	0.0245	0.0070	0.0105	0.0059	0.0188	0.0068	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0395
Meat.	0.0486	2.7818	0.0089	0.4879	0.1082	0.0251	0.0187	0.0124	0.0606	0.0103	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0841
Extr	0.0628	0.0531	2.1631	0.1011	0.0438	0.1155	0.4516	0.1511	0.0457	0.0198	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0523
Pro.fd	0.0526	0.0894	0.0123	2.2710	0.0273	0.0181	0.0194	0.0136	0.0640	0.0144	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1360
text	0.0033	0.0038	0.0021	0.0049	2.5519	0.0082	0.0043	0.0051	0.0069	0.0040	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0226
l.mfg	0.0684	0.0772	0.0696	0.1541	0.1415	2.3384	0.1302	0.2445	0.1467	0.0845	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1735
h.mfg	0.2424	0.1782	0.1349	0.2066	0.1687	0.3246	2.4496	0.3280	0.1786	0.0696	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1835
u.con	0.1104	0.1191	0.1756	0.1224	0.1095	0.1051	0.2401	2.6255	0.1200	0.0911	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1413
tran.c	0.3608	0.4180	0.2387	0.5471	0.5567	0.4429	0.3870	0.3508	2.4802	0.2458	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.8924
other	0.3968	0.4298	0.3459	0.4772	0.5072	0.5235	0.4634	0.6405	0.6502	2.7310	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.2772
Land	0.1326	0.0922	0.0006	0.0294	0.0047	0.0012	0.0012	0.0007	0.0029	0.0007	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0048
Unsk.l	0.4101	0.4193	0.1599	0.3287	0.4460	0.3172	0.2477	0.3394	0.3341	0.2513	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.2435
sk.l	0.0815	0.1032	0.0763	0.1257	0.1830	0.1482	0.1370	0.1669	0.1735	0.2758	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.1745
capital	0.2681	0.2595	0.3599	0.2771	0.2200	0.2244	0.2418	0.2619	0.2587	0.3389	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.2420
Nat.r	0.0038	0.0032	0.1321	0.0062	0.0027	0.0071	0.0276	0.0092	0.0028	0.0012	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0032
reg.h	0.6332	0.6165	0.4841	0.5222	0.6002	0.4790	0.4447	0.5314	0.5270	0.5810	0.8677	0.7591	0.7609	0.5275	0.8648	0.0000	0.4522
priv.h	-0.0051	0.0025	0.0178	0.0149	0.0333	0.0222	0.0212	0.0219	0.0250	0.0210	0.0000	0.0000	0.0000	0.0000	0.0000	0.6272	0.0752

Output Multiplier	3.626468	4.288976	3.156117	4.627354	4.239413	3.908297	4.174691	4.377434	3.77175	3.277187
GDP Multiplier	0.896152	0.877444	0.728845	0.767062	0.856277	0.697968	0.655267	0.778197	0.772016	0.867904
Income Multiplier	0.633155	0.616519	0.484058	0.522182	0.600184	0.478995	0.444702	0.53142	0.527039	0.581034

East Asia

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.3617	0.3705	0.0304	0.4731	0.1851	0.0351	0.0202	0.0191	0.0380	0.0156	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1299
Meat.	0.0182	2.7071	0.0138	0.1460	0.0827	0.0718	0.0191	0.0162	0.0363	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1022
Extr	0.0308	0.0468	2.1932	0.1479	0.0374	0.0802	0.1392	0.1148	0.0329	0.0200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0580
Pro.fd	0.0406	0.5394	0.0595	2.3829	0.0489	0.0414	0.0335	0.0293	0.0796	0.0266	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2402
text	0.0113	0.0099	0.0303	0.0198	3.1364	0.0728	0.0307	0.0286	0.0238	0.0229	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0736
l.mfg	0.0845	0.0942	0.1739	0.2018	0.2304	2.9465	0.2340	0.3146	0.1441	0.1567	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2382
h.mfg	0.5319	0.2510	0.6343	0.4339	0.5693	1.0420	3.3734	1.0571	0.3374	0.3073	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4969
u.con	0.0702	0.0513	0.1150	0.0845	0.1291	0.1026	0.1335	2.1216	0.0769	0.0791	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1241
tran.c	0.2093	0.2638	0.2801	0.3525	0.3222	0.3568	0.3117	0.3803	2.4055	0.2693	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7848
other	0.2087	0.2042	0.2536	0.3001	0.3290	0.3571	0.3434	0.3756	0.4744	2.4489	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.0922
Land	0.3790	0.2114	0.0056	0.0839	0.0343	0.0097	0.0043	0.0040	0.0081	0.0031	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0265
Unsk.l	0.6266	0.4944	0.3178	0.3251	0.3149	0.2736	0.2185	0.2833	0.2738	0.2510	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.2500
sk.l	0.0383	0.0454	0.0601	0.0762	0.0786	0.1029	0.0853	0.1204	0.1349	0.1733	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.1177
capital	0.3482	0.2613	0.2679	0.3289	0.2764	0.3084	0.2716	0.3107	0.3938	0.4066	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.3273
Nat.r	0.0024	0.0037	0.1717	0.0116	0.0029	0.0063	0.0109	0.0090	0.0026	0.0016	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0045
reg.h	1.2158	0.8801	0.6968	0.6770	0.5785	0.5620	0.4704	0.5854	0.6413	0.6573	0.9830	0.9284	0.9101	0.6443	0.9837	0.0000	0.5806
priv.h	-0.2772	-0.0693	0.0150	-0.0319	0.0335	0.0291	0.0296	0.0317	0.0349	0.0340	0.0000	0.0000	0.0000	0.0000	0.0000	0.5612	0.0474

output M	3.567094	4.538214	3.784151	4.542595	5.070544	5.106387	4.638632	4.457128	3.648781	3.357762
GDP M	1.394478	1.016198	0.823125	0.825732	0.707079	0.700755	0.590531	0.727269	0.813276	0.835601
Income M	1.215795	0.880105	0.69676	0.676972	0.578518	0.561962	0.470356	0.585442	0.641266	0.657331

Southeast Asia

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.5974	0.2406	0.0205	0.5787	0.0339	0.0324	0.0250	0.0161	0.0556	0.0208	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2310
Meat.	0.0297	2.7564	0.0037	0.0709	0.0214	0.0162	0.0090	0.0079	0.0386	0.0107	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1041
Extr	0.0174	0.0448	2.0666	0.1389	0.0266	0.1155	0.1661	0.1274	0.0369	0.0200	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0901
Pro.fd	0.0127	0.4365	0.0236	2.4486	0.0323	0.0241	0.0236	0.0161	0.0651	0.0219	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2394
text	0.0029	0.0036	0.0047	0.0060	2.6588	0.0258	0.0118	0.0089	0.0125	0.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0659
l.mfg	0.0280	0.0413	0.0368	0.0799	0.0798	2.3159	0.0771	0.2742	0.0989	0.0829	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1858
h.mfg	0.1704	0.1177	0.0932	0.1757	0.1951	0.3980	2.4996	0.4480	0.2826	0.1194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3206
u.con	0.0249	0.0460	0.0413	0.0660	0.0738	0.0771	0.0898	2.2930	0.0750	0.1135	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1339
tran.c	0.1437	0.2727	0.1425	0.3932	0.2791	0.3258	0.2971	0.3168	2.3837	0.2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6485
other	0.0805	0.0906	0.0870	0.1203	0.1161	0.1278	0.1231	0.1712	0.2404	2.4158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6604
Land	0.3813	0.2490	0.0033	0.0899	0.0066	0.0060	0.0043	0.0030	0.0111	0.0039	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0418
Unsk.l	0.3690	0.3441	0.1612	0.2629	0.1924	0.1814	0.1337	0.2239	0.2476	0.2090	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.1875
sk.l	0.0146	0.0269	0.0304	0.0395	0.0394	0.0455	0.0402	0.0631	0.0644	0.1706	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0669
capital	0.1288	0.2226	0.4726	0.3399	0.3207	0.3391	0.3133	0.3646	0.4224	0.4404	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.3002
Nat.r	0.0018	0.0047	0.2169	0.0146	0.0028	0.0121	0.0174	0.0134	0.0039	0.0021	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0095
reg.h	0.8104	0.7469	0.7236	0.6288	0.4604	0.4769	0.4111	0.5511	0.6153	0.6849	0.9181	0.9543	0.9585	0.7185	0.9132	0.0000	0.5058
priv.h	0.0020	0.0098	0.0123	0.0130	0.0285	0.0178	0.0137	0.0133	0.0099	0.0079	0.0000	0.0000	0.0000	0.0000	0.0000	0.6157	0.0434

Output M	3.107675	4.050322	2.519916	4.078266	3.516893	3.458491	3.322144	3.679676	3.289457	3.017914
GDP M	0.895453	0.847212	0.884367	0.746782	0.561851	0.584077	0.508913	0.667961	0.749393	0.825957
Income M	0.810369	0.746937	0.723634	0.628847	0.460396	0.47693	0.411095	0.551084	0.615279	0.684885

South Asia

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.3883	0.4251	0.0166	0.8307	0.3176	0.0404	0.0502	0.0414	0.0785	0.0127	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4824
Meat.	0.1023	2.0631	0.0057	0.1275	0.0305	0.0310	0.0142	0.0111	0.0263	0.0039	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2134
Extr	0.0245	0.0132	2.0246	0.0565	0.0246	0.0862	0.1416	0.1076	0.0233	0.0093	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0786
Pro.fd	0.0094	0.0622	0.0090	2.2247	0.0169	0.0131	0.0168	0.0104	0.0305	0.0054	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2711
text	0.0101	0.0111	0.0146	0.0204	2.6320	0.0150	0.0139	0.0083	0.0091	0.0069	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1306
l.mfg	0.0349	0.0274	0.0563	0.0753	0.0766	2.3242	0.1168	0.1747	0.0988	0.0498	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1122
h.mfg	0.3112	0.1199	0.2088	0.3166	0.3283	0.5665	2.6906	0.5668	0.2836	0.0945	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3542
u.con	0.2001	0.0607	0.1286	0.1465	0.1321	0.1972	0.2164	2.2057	0.1122	0.0853	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1755
tran.c	0.2467	0.4166	0.2347	0.5261	0.5502	0.4267	0.3744	0.4144	2.2985	0.1515	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7272
other	0.0599	0.0467	0.0862	0.1266	0.1894	0.2426	0.1512	0.1736	0.1523	2.1906	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5014
Land	0.3135	0.3171	0.0028	0.1208	0.0439	0.0090	0.0081	0.0066	0.0132	0.0021	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0880
Unsk.l	0.3675	0.3521	0.2481	0.3148	0.2943	0.2802	0.1767	0.3441	0.3234	0.2629	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.2782
sk.l	0.0253	0.0211	0.0333	0.0528	0.0628	0.0699	0.0468	0.0874	0.0817	0.2539	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0869
capital	0.2411	0.2329	0.4177	0.3133	0.3401	0.3188	0.2994	0.3232	0.4272	0.4053	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.3135
Nat.r	0.0021	0.0011	0.1743	0.0049	0.0021	0.0074	0.0122	0.0093	0.0020	0.0008	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0068
reg.h	0.8592	0.8368	0.7496	0.7061	0.6393	0.5886	0.4559	0.6697	0.7204	0.8002	0.9593	0.9638	0.9649	0.7379	0.9599	0.0000	0.6742
priv.h	0.0209	0.0136	0.0215	0.0331	0.0308	0.0359	0.0626	0.0331	0.0299	0.0062	0.0000	0.0000	0.0000	0.0000	0.0000	0.6879	0.0502

Output M	3.387374	3.245928	2.78502	4.450866	4.298356	3.943115	3.78623	3.713889	3.113261	2.609866
GDP M	0.949432	0.924302	0.876336	0.806544	0.743191	0.685395	0.543247	0.770539	0.847531	0.924953
Income M	0.859214	0.836839	0.749603	0.706068	0.639335	0.588583	0.455915	0.669682	0.720375	0.800195

North America

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.0608	0.2802	0.0021	0.1976	0.0177	0.0023	0.0030	0.0043	0.0043	0.0054	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0247
Meat.	0.0061	2.9130	0.0048	0.2083	0.0149	0.0062	0.0048	0.0034	0.0099	0.0107	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0533
Extr	0.0313	0.0248	2.0808	0.0342	0.0297	0.0589	0.1597	0.0822	0.0199	0.0108	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0245
Pro.fd	0.0076	0.3164	0.0079	2.3017	0.0097	0.0086	0.0087	0.0068	0.0186	0.0268	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1158
text	0.0157	0.0088	0.0047	0.0080	2.6497	0.0286	0.0099	0.0090	0.0081	0.0042	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0336
l.mfg	0.0982	0.1328	0.0570	0.2214	0.0894	2.4831	0.1353	0.2445	0.1007	0.0752	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1764
h.mfg	0.3609	0.2416	0.1825	0.2587	0.3815	0.4635	2.6441	0.3564	0.2345	0.1088	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2606
u.con	0.1041	0.1255	0.1179	0.1062	0.1073	0.1024	0.1246	2.1713	0.1055	0.0970	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1329
tran.c	0.2880	0.4147	0.1971	0.4201	0.3351	0.3727	0.3592	0.3005	2.2910	0.1933	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6411
other	0.4268	0.4761	0.2766	0.4309	0.3989	0.3204	0.3366	0.3654	0.4685	2.4713	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1.4834
Land	0.1645	0.0618	0.0002	0.0186	0.0016	0.0003	0.0003	0.0004	0.0005	0.0006	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0027
Unsk.l	0.3166	0.3595	0.1582	0.2930	0.3538	0.3144	0.2468	0.3604	0.3631	0.2623	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.2664
sk.l	0.0922	0.1198	0.0819	0.1304	0.1317	0.1629	0.1599	0.1584	0.1560	0.2857	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.2099
capital	0.3006	0.2721	0.3285	0.3295	0.1999	0.2131	0.2227	0.2392	0.2615	0.2622	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.2370
Nat.r	0.0028	0.0022	0.1832	0.0030	0.0026	0.0052	0.0141	0.0072	0.0018	0.0010	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0022
reg.h	0.6518	0.5961	0.5497	0.5464	0.5041	0.5064	0.4644	0.5564	0.5647	0.5871	0.9172	0.7907	0.7892	0.5828	0.9182	0.0000	0.5189
priv.h	0.0068	0.0373	0.0436	0.0538	0.0691	0.0649	0.0595	0.0682	0.0756	0.0699	0.0000	0.0000	0.0000	0.0000	0.0000	0.7623	0.0871

Output M	3.399538	4.933909	2.931535	4.187022	4.034011	3.846849	3.785832	3.543733	3.260823	3.003504
GDP M	0.876718	0.815313	0.752095	0.774469	0.689614	0.695835	0.643827	0.765569	0.782793	0.811737
Income M	0.651779	0.596058	0.54969	0.546442	0.504093	0.506375	0.46438	0.556368	0.564657	0.587123

Latin America

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.2253	0.1929	0.0114	0.4915	0.1109	0.0141	0.0213	0.0082	0.0302	0.0089	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1246
Meat.	0.0260	2.9325	0.0093	0.2383	0.0328	0.0334	0.0143	0.0080	0.0342	0.0112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1478
Extr	0.0654	0.0684	2.1320	0.0845	0.0375	0.1343	0.3967	0.1166	0.0417	0.0201	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0681
Pro.fd	0.0451	0.2899	0.0261	2.3838	0.0226	0.0237	0.0274	0.0143	0.0796	0.0189	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2428
text	0.0079	0.0092	0.0080	0.0132	2.5750	0.0275	0.0112	0.0079	0.0114	0.0097	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0788
l.mfg	0.0594	0.0767	0.0804	0.1137	0.0802	2.4335	0.1340	0.1580	0.0926	0.0722	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1992
h.mfg	0.3795	0.2413	0.2050	0.2825	0.2044	0.4826	2.6193	0.4712	0.2267	0.1018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3101
u.con	0.0526	0.0708	0.0764	0.0701	0.0723	0.0891	0.1299	2.1091	0.0603	0.0781	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1051
tran.c	0.3048	0.3641	0.2743	0.4568	0.3522	0.4048	0.3680	0.2448	2.3632	0.2001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7422
other	0.1636	0.1747	0.2343	0.2535	0.2511	0.2378	0.2562	0.2213	0.3124	2.3340	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.8547
Land	0.1438	0.0970	0.0010	0.0385	0.0081	0.0019	0.0018	0.0008	0.0029	0.0009	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0123
Unsk.l	0.2971	0.2988	0.1723	0.2826	0.3247	0.2791	0.2263	0.2717	0.3103	0.2453	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.2338
sk.l	0.0355	0.0467	0.0499	0.0655	0.0733	0.0699	0.0645	0.0738	0.0957	0.2282	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.1113
capital	0.3867	0.3846	0.4431	0.3829	0.2912	0.3297	0.3582	0.4225	0.3759	0.3729	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.3154
Nat.r	0.0057	0.0060	0.1866	0.0074	0.0033	0.0118	0.0347	0.0102	0.0036	0.0018	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0060
reg.h	0.7098	0.6778	0.6737	0.6264	0.5839	0.5632	0.5462	0.6170	0.6418	0.7016	0.9254	0.9699	0.9699	0.6435	0.9225	0.0000	0.5545
priv.h	0.0234	0.0437	0.0340	0.0461	0.0609	0.0622	0.0567	0.0520	0.0647	0.0626	0.0000	0.0000	0.0000	0.0000	0.0000	0.6874	0.1115

Output M	3.329491	4.420514	3.05727	4.387985	3.738922	3.88083	3.978421	3.359298	3.252354	2.85492
GDP M	0.868831	0.833017	0.85291	0.776851	0.700559	0.692281	0.685435	0.778891	0.788512	0.849045
Income M	0.709771	0.67779	0.673724	0.626399	0.583899	0.563176	0.546156	0.617009	0.641756	0.701645

Eu25

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.0609	0.2076	0.0063	0.1432	0.0417	0.0036	0.0037	0.0059	0.0126	0.0042	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0288
Meat.	0.0021	2.5055	0.0043	0.1830	0.0047	0.0038	0.0036	0.0025	0.0155	0.0042	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0508
Extr	0.0094	0.0136	2.0873	0.0167	0.0055	0.0283	0.0395	0.0332	0.0082	0.0041	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0119
Pro.fd	0.0081	0.3126	0.0173	2.3769	0.0230	0.0183	0.0163	0.0104	0.0714	0.0159	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1816
text	0.0032	0.0035	0.0056	0.0040	2.4067	0.0120	0.0053	0.0042	0.0068	0.0032	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0458
l.mfg	0.0594	0.0940	0.0774	0.1363	0.1072	2.4953	0.1562	0.1804	0.1028	0.0758	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2138
h.mfg	0.2222	0.1272	0.1532	0.1506	0.1665	0.2820	2.4698	0.3275	0.2246	0.0832	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2096
u.con	0.0933	0.0854	0.1129	0.0917	0.0769	0.0794	0.0951	2.3261	0.0835	0.0906	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1171
tran.c	0.1033	0.1682	0.1939	0.2359	0.2202	0.2052	0.1819	0.1527	2.4685	0.1490	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6357
other	0.3217	0.3795	0.3215	0.4904	0.3959	0.4197	0.3835	0.4121	0.5584	2.5746	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.9834
Land	0.1444	0.0687	0.0005	0.0140	0.0030	0.0003	0.0003	0.0005	0.0012	0.0004	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0031
Unsk.l	0.3734	0.2703	0.1289	0.2044	0.2140	0.1939	0.1530	0.1928	0.2028	0.1666	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.1391
sk.l	0.0563	0.0659	0.0616	0.0850	0.0774	0.0911	0.0917	0.0965	0.1129	0.1845	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0991
capital	0.2498	0.3031	0.3800	0.2898	0.2151	0.2246	0.2128	0.3294	0.3055	0.3836	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.2392
Nat.r	0.0007	0.0010	0.1569	0.0013	0.0004	0.0021	0.0030	0.0025	0.0006	0.0003	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0009
reg.h	0.6067	0.4993	0.5163	0.4056	0.3506	0.3506	0.3142	0.4181	0.4221	0.4948	0.9338	0.7427	0.7403	0.6096	0.9106	0.0000	0.3262
priv.h	0.0116	0.0247	0.0662	0.0719	0.0814	0.0825	0.0792	0.0836	0.1104	0.0966	0.0000	0.0000	0.0000	0.0000	0.0000	0.6586	0.1462

Output M	2.883702	3.897213	2.979443	3.828773	3.448301	3.547675	3.354967	3.455027	3.552136	3.004699
GDP M	0.824607	0.708957	0.727944	0.594491	0.509961	0.512132	0.460699	0.621641	0.622994	0.73542
Income M	0.606734	0.499318	0.516342	0.405615	0.350554	0.350645	0.31417	0.418104	0.422084	0.494803

Middle East and North Africa

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.2771	0.3778	0.0162	0.4003	0.0915	0.0354	0.0223	0.0153	0.0385	0.0432	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3159
Meat.	0.0628	2.4227	0.0078	0.1409	0.1052	0.0302	0.0152	0.0099	0.0321	0.0205	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1877
Extr	0.0654	0.0486	2.0984	0.0925	0.0582	0.1336	0.8240	0.4551	0.1110	0.0690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1670
Pro.fd	0.0158	0.0756	0.0163	2.2296	0.0324	0.0176	0.0174	0.0118	0.0479	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2638
text	0.0090	0.0300	0.0050	0.0206	2.4549	0.0213	0.0113	0.0070	0.0082	0.0485	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1369
l.mfg	0.0248	0.0307	0.0326	0.0551	0.0597	2.3507	0.0758	0.1604	0.0512	0.0754	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1436
h.mfg	0.1559	0.1023	0.0959	0.1650	0.1350	0.2757	2.3919	0.4462	0.2709	0.1377	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.3142
u.con	0.0585	0.0520	0.0319	0.0631	0.0606	0.1173	0.1405	2.1567	0.0797	0.1125	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1788
tran.c	0.1907	0.3193	0.3214	0.2922	0.2142	0.2954	0.3067	0.1949	2.1989	0.1525	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5225
other	0.0747	0.0775	0.0751	0.1114	0.1810	0.1246	0.1322	0.1075	0.1386	2.2424	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4600
Land	0.0755	0.0518	0.0007	0.0154	0.0047	0.0016	0.0010	0.0007	0.0018	0.0017	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0134
Unsk.l	0.4086	0.3673	0.1097	0.2388	0.2122	0.1878	0.1404	0.2034	0.2552	0.2332	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.2113
sk.l	0.0198	0.0332	0.0285	0.0423	0.0478	0.0443	0.0401	0.0507	0.0705	0.2362	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0706
capital	0.2887	0.3021	0.4484	0.3114	0.3283	0.2826	0.3423	0.3443	0.4134	0.2967	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.2756
Nat.r	0.0072	0.0053	0.2309	0.0102	0.0064	0.0147	0.0907	0.0501	0.0122	0.0076	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0184
reg.h	0.6258	0.5848	0.5642	0.4515	0.4287	0.3821	0.4294	0.4645	0.5380	0.6019	0.8856	0.9220	0.9172	0.5475	0.8265	0.0000	0.4375
priv.h	0.0218	0.0259	0.0120	0.0283	0.0302	0.0286	0.0203	0.0239	0.0212	0.0262	0.0000	0.0000	0.0000	0.0000	0.0000	0.6371	0.0351

Output M	2.93468	3.536689	2.70063	3.570791	3.392655	3.401837	3.937374	3.564887	2.976865	2.951453
GDP M	0.799802	0.759748	0.818136	0.61809	0.599477	0.531065	0.614386	0.649155	0.753098	0.775424
Income M	0.625765	0.584775	0.564162	0.451519	0.428743	0.382135	0.429382	0.464525	0.537965	0.601926

Sub-Saharan Africa

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.1257	0.1082	0.0067	0.3263	0.0949	0.0270	0.0194	0.0118	0.0178	0.0149	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.4409
Meat.	0.0095	2.5408	0.0047	0.0804	0.0335	0.0231	0.0116	0.0094	0.0191	0.0148	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1845
Extr	0.0118	0.0338	2.0282	0.0955	0.0217	0.0932	0.1505	0.1233	0.0225	0.0170	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0739
Pro.fd	0.0217	0.1313	0.0119	2.3367	0.0354	0.0350	0.0290	0.0159	0.0392	0.0429	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2750
text	0.0126	0.0114	0.0077	0.0113	2.2372	0.0291	0.0102	0.0084	0.0169	0.0130	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0706
l.mfg	0.0389	0.0616	0.0573	0.1024	0.1190	2.4368	0.1370	0.1918	0.1045	0.1158	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1679
h.mfg	0.0851	0.1173	0.1529	0.1375	0.1888	0.4201	2.4615	0.3664	0.2067	0.1162	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2165
u.con	0.0220	0.0445	0.0612	0.0485	0.0562	0.0768	0.1242	2.3973	0.0648	0.0672	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0870
tran.c	0.2471	0.5534	0.2034	0.6235	0.8421	0.7094	0.6478	0.3085	2.4004	0.2648	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5062
other	0.0687	0.1540	0.1576	0.2302	0.3072	0.2376	0.2700	0.2356	0.3178	2.3994	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6071
Land	0.0960	0.0472	0.0004	0.0161	0.0048	0.0016	0.0011	0.0007	0.0011	0.0009	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0230
Unsk.l	0.5698	0.4436	0.1362	0.3175	0.3268	0.2612	0.2177	0.2448	0.3025	0.2512	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.2819
sk.l	0.0195	0.0580	0.0325	0.0668	0.0807	0.0695	0.0671	0.0763	0.0990	0.2235	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0793
capital	0.1999	0.2820	0.4436	0.3706	0.2858	0.3253	0.3350	0.3750	0.3684	0.3522	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.2509
Nat.r	0.0013	0.0036	0.2169	0.0102	0.0023	0.0100	0.0161	0.0132	0.0024	0.0018	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0079
reg.h	0.7036	0.6373	0.6190	0.5715	0.5202	0.4853	0.4585	0.5100	0.5625	0.6108	0.9393	0.8299	0.8157	0.6173	0.9465	0.0000	0.4826
priv.h	0.0197	0.0247	0.0298	0.0285	0.0418	0.0393	0.0344	0.0312	0.0323	0.0268	0.0000	0.0000	0.0000	0.0000	0.0000	0.7371	0.0677

Output M	2.64311	3.756309	2.691376	3.99224	3.935999	4.088014	3.8612	3.668264	3.209593	3.066028
GDP M	0.886435	0.834462	0.829561	0.781219	0.700461	0.66767	0.637015	0.709967	0.773401	0.829697
Income M	0.703551	0.637322	0.619005	0.571537	0.520203	0.485281	0.458476	0.509996	0.562507	0.610823

Rest of the World

	Grain	Meat.	Extr	Pro.fd	text	l.mfg	h.mfg	u.con	tran.c	other	Land	Unsk.l	sk.l	capital	Nat.r	reg.h	priv.h
Grain	2.1590	0.3424	0.0028	0.3096	0.0322	0.0077	0.0052	0.0047	0.0137	0.0083	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1257
Meat.	0.0586	2.6388	0.0031	0.1701	0.0400	0.0105	0.0066	0.0054	0.0178	0.0106	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1484
Extr	0.0530	0.0590	2.0011	0.0733	0.0402	0.1155	0.4817	0.1945	0.0642	0.0300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0807
Pro.fd	0.0140	0.1707	0.0090	2.4266	0.0138	0.0146	0.0111	0.0110	0.0389	0.0209	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2030
text	0.0039	0.0077	0.0021	0.0123	2.4213	0.0146	0.0057	0.0045	0.0075	0.0059	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0274
l.mfg	0.0358	0.0590	0.0270	0.0857	0.0666	2.3017	0.0669	0.1052	0.0696	0.0516	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.1279
h.mfg	0.2135	0.1792	0.1190	0.1712	0.1463	0.3004	2.4503	0.4111	0.2315	0.0946	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2737
u.con	0.1104	0.1502	0.0667	0.1342	0.1425	0.1427	0.1973	2.2731	0.1123	0.1181	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.2217
tran.c	0.1821	0.3247	0.1712	0.3678	0.2340	0.2703	0.2378	0.3150	2.3528	0.1681	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.7168
other	0.1250	0.1468	0.1054	0.1750	0.1949	0.1877	0.1583	0.1661	0.2317	2.3263	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.5973
Land	0.1981	0.1018	0.0003	0.0327	0.0040	0.0010	0.0007	0.0006	0.0017	0.0010	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0154
Unsk.l	0.3781	0.2866	0.0803	0.2118	0.2020	0.1921	0.1406	0.2081	0.1946	0.2085	0.0000	1.0000	0.0000	0.0000	0.0000	0.0000	0.1640
sk.l	0.0266	0.0386	0.0262	0.0540	0.0528	0.0673	0.0555	0.0738	0.0810	0.2012	0.0000	0.0000	1.0000	0.0000	0.0000	0.0000	0.0794
capital	0.2577	0.3351	0.4572	0.3942	0.3280	0.2975	0.3594	0.3624	0.4690	0.3733	0.0000	0.0000	0.0000	1.0000	0.0000	0.0000	0.3051
Nat.r	0.0061	0.0068	0.2319	0.0085	0.0047	0.0134	0.0558	0.0225	0.0074	0.0035	0.0000	0.0000	0.0000	0.0000	1.0000	0.0000	0.0094
reg.h	0.6902	0.5959	0.6373	0.5301	0.4427	0.4294	0.4664	0.5024	0.5620	0.5903	0.9403	0.7658	0.7648	0.7299	0.9562	0.0000	0.4325
priv.h	0.0087	0.0299	0.0580	0.0438	0.0514	0.0582	0.0616	0.0661	0.0583	0.0643	0.0000	0.0000	0.0000	0.0000	0.0000	0.5947	0.0836

Output M	2.955354	4.078525	2.507389	3.925834	3.331793	3.365804	3.62091	3.490597	3.140112	2.834268
GDP M	0.866663	0.768934	0.79588	0.701213	0.591473	0.571209	0.611944	0.667443	0.753738	0.787459
Income M	0.690174	0.595868	0.637265	0.53013	0.442722	0.429416	0.466423	0.502448	0.562032	0.590288