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EFFECT OF AGROINDUSTRY TO ECONOMY IN BALI AREA

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Abstract

Research on the effects of agro-industries in the economy aimed at: (1) provide an overview of the transactions between the various sectors; (2) determine the impact of final demand for the output, the impact of backward and forward to direct impact, rear impact and impact to the front to indirectly; (3) analyze the prevalence and sensitivity of economic sectors to regional economic growth; (4) determine the impact of multiple intersectoral income economy in Bali Area. The effects of the economic sectors of agro-industry views of calculating consumer prices and producer prices showed that: (1) the manufacturing sector had an backward linkage, either directly or indirectly, lower than the service sector and agriculture; (2) The manufacturing sector has an indirect impact to the rear is high, but the indirect impact to the front lower than the agricultural sector and the service sector. Power distribution and power sensitivity between economic sectors with the calculation of the consumer price indicated by the manufacturing sector the most good, because it has a value greater than one for 1.2655 and 1.6269. Power producer price sensitivity calculations indicate a lower value in the manufacturing sector amounted to 0.7768, the highest in the agriculture sector amounted to 1.6259. The manufacturing sector has a degree of sensitivity is lacking, if the calculation on the basis of producer prices. Increasing the number of sub-sectors have not contributed the maximum to the GDP. The highest earnings multiple impact on the manufacturing sector, while the agricultural sector is low. Based on the input-output analysis, it is necessary to do further research on the agricultural sector, so that the results of research into resources.

Keywords: input-output, backward linkage, forward linkage, power distribution, degree of sensitivity, multiple impacts revenue.

INTRODUCTION

The rapid development of the global economy affects the national economy and the regional economy. Global economic competition also led to competition in the regional economy. In the face of free competition, Small Industrial Craft demanded to be able to innovate and market access. While the policy for the development of economic sectors that rely on the government regulations yet to show maximum results. One strategy to boost the performance of Small Industrial Craft in the free market and overcome the gap among industries is happening, is by growing efforts in building a stronger industrial structure

Regional economic structure of Bali Area has been relying more on the tourism sector as a leading sector (leading sector), particularly trade, hotels and restaurants (Bank Indonesia, 2010). This sector contributes to the GDP Bali before the Bali bombing of 31.85 percent. However, this sector after the Bali bombing contribution of the tourism sector to contribute further decreased to 28.88 percent (CBS, 2011). The industry's contribution to the GDP before the Bali bombing above 18 percent, but after the Bali bombings has decreased. In the BPS (2007) stated that tourism as a leading sector has not been able to contribute a maximum of proven this sector contributes still relatively lower than the industrial sector (secondary). This leads to imbalances between sectors to one another, so that there is a difference between one region to another. The realization of the gorge / welfare differences between regions are generally caused by the activities of economic sectors such as industry, trade, finance,

services and other economic sectors of activity between regions rich than poor areas (Sukirno, 1976: 13)..

Differences sector economic activities between regions rich in poor areas give rise to differences in the achievement of prosperity increasingly keen on the area. As expressed by (Myrdal, 1957), in the backwash effect theory, a sharp distinction between areas that could pose a lot of obstacles or concerns for the countries / regions poor in developing economies. The result appears interregional migration that can not be dibedung, except by government intervention with a policy or new regulations. In addition, differences in economic development between regions will occur continuously. The development of rich regions could lead to congestion (Sukirno, 1976). Further congestion as a factor that will be able to narrow the prosperity gap between rich areas with poorer regions. Some of the factors that can narrow these differences are: (1) external dis-economies, (2) wage or salary, other payments, (3) development of rich regions led to some infrastructure and production facilities become obsolete.

Intended use Input-Output models in the analysis of the effects of agro-industry to the regional economy in Bali province refers to several studies., Some economists as expressed by (Isard, 1960; Miernyk, 1969; Miller, et.al, 1985; Miller, et.al ., 1989; Miller, et.al, 2009) that the advantage of input-Output analysis is useful for structural analysis. Input-Output simultaneously illustrates the relationship demand and supply at the point of equilibrium and can be used as an evaluation tool in public investment to national and regional economies; as well as a prediction tool and planning through the mechanisms of the relationship between the demand end of the output. Input-output forecast to reflect the nature of the relationship is linear and regional economic development planning and consistency between sectoral economic activities; Regional economic analysis tools and can be applied to an analysis of the region and between regions.; Impact analysis tool, which is used for inter-sectoral analysis of the impact of economic, employment, and income; Sensitivity analysis tools and due diligence, which is used to observe the activities of economic sectors most dominant influence on economic growth; Can be used together with an analysis of the comparative costs of the industrial complex in regional economic analysis. This research study to menganalisis inter-regional problems through the study of the "Effects of Agro-Industry to the economy in Bali.

RESEARCH METHODS

Design research is explorative and quantitative. The research method used was survey, and documentation. Data peneltian form of quantitative data derived from direct observation and document BPS Bali diterbit 2012. Quantitative data observed over a period of years (2005-2012). Quantitative data were analyzed by the method of Input-Output.

DISCUSSION

Bali provincial regional economic structure from the supply side had accelerated from 6.49 percent in 2011 to 6.79 percent in 2012 (BI, 2012). GRDP of Bali is still dominated by the tourism sector which is sub-sectors of trade, hotels and restaurants, the end of 2012 slowed down by 10.46 percent. This was caused by the global economic crisis, congestion and infrastructure development factors that can interfere with the comfort of tourists.

Efforts are being made to improve the demand side is developing new tourist attractions, intensive promotion, accelerate the construction of supporting infrastructure for tourism. Bali increased economic growth on the demand side factors due to private consumption is quite

high in 2012 of about 60.52 percent. Similarly, the end of 2012 investment demand is increasing from 15.24 percent to 18.83 percent also stimulate economic growth Bali (BI, 2012). However, disubsektor wooden items and the results give a share to the GDP of Bali province. highly volatile

Agro-industries to the GDP contribution of Bali Province during the eight-year period 2005-2012 is very volatile. Fluakuatif very sharp indicated by the manufacturing sector. The maximum contribution occurred in 2007, but the minimum contribution rate in 2011. Then in 2012 there is a tendency value increased more sharply than the agricultural sector (agriculture) and the service sector.

The linkage of upstream-downstream industry in Bali as a subsector of manufacturing can be done with the analysis of backward and forward linkages. This analysis is necessary to forecast trends and prospects existence of SMEs / Small Industrial Craft Bali in giving role and contribution to the regional economy. Effect of a sector improvement will be seen in the sectors that supply or provide input backward linkages. In this case the wooden handicraft industry will be able to encourage increased production of timber, in order to have a market value and final demand is increasing. Impact backward wooden handicrafts industry is to make agriculture as crop wood industry can supply raw material needs and can help governments need to be a concern. While this wood raw material into production constraints and problems of Small Industries in Bali.

In 2011 the number of SMEs is very large, but the resulting output is used very little by other sectors, so that its contribution to the regional economy is very small in the same year. It is thus necessary that other sectors such as services, agriculture to support the manufacturing sector as an umbrella for MSMEs subsector through linkage production programs such as marketing, access to raw materials and production market.

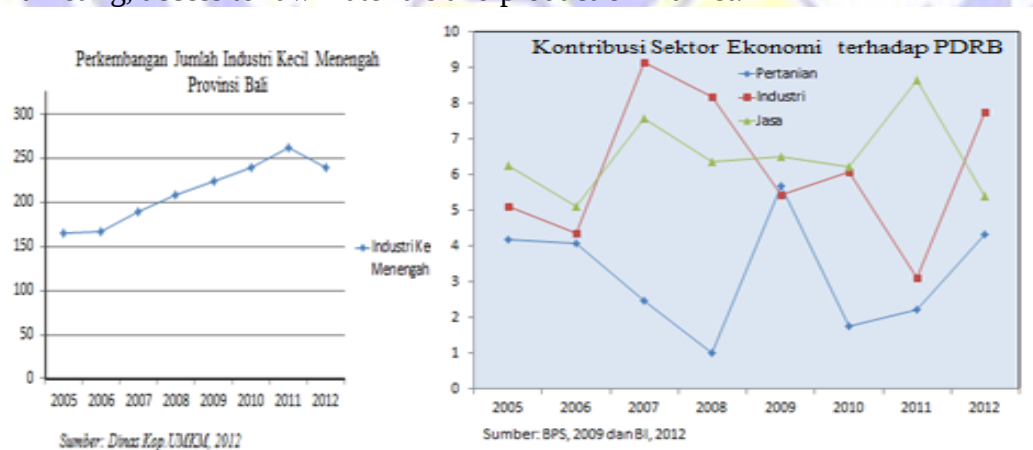


Figure 01. The Number of SMEs and contribution for economy

Coefficient Input and Interdependence Between Sectors.

Linkages between sectors of the economy can be measured by the degree of interdependence among economic sectors. The growth of a sector affected by other sectors or reverse the decline of a sector can also be determined by other sectors. Input coefficients between sectors of the economy can be calculated based on consumer prices and producer prices. Input coefficient values between economic sectors show linkages with other sectors of the sector is still relatively small. Input coefficients are calculated based on the consumer price coefficient obtained the highest input in the manufacturing sector amounted to 0.53091. While the input

coefficient between calculated based on the producer price is also indicated by the manufacturing sector amounted to 0.47084. Overall agriculture, industry and services in the Province of Bali is still low, so it needs to be increased role in the regional economy through the linkage program (linkage.program) as he had done several countries crate Italy, and Dhaka (Shepherd, 2011; Patro et.al. , 2009).

Analysis of Upstream-Downstream Agroindustri

Based on the coefficient of intermediate inputs on the basis of the purchase price (consumer) and the coefficient input on the basis of producer prices prevailing in the province of Bali connection or dependency between sectors it is necessary to note that: (1) backward linkage, (2) indirect backward linkage, (3) forward linkage, (4) indirect forward linkage and (5) employment linkage. Table 4 shows a summary of the value of backward and forward linkages between sectors, either directly or indirectly. The results of calculations of the effect linkages between sectors as follows.

Table 01. Effect Economic Sector Calculated Based On Consumer Price

No.	Linkage	Economic Sector		
		A	M-IKK	S
1	Backward Linkage	0,0753	0,1225	0,0574
2	Forward Linkage	0,6914	0,4246	0,1341
3	Indirect Backward Linkage	1,6272	0,2053	1,3473
4	Indirect Forward Linkage	0,5608	1,0455	1,5735
5	Backward power of dispersion	1,7247	0,2176	1,4279
6	Forward power of dispersion	0,5943	1,1084	1,6678

Tabel 02 Effect Economic Sector Calculated Based On Producer Price

No.	Linkage	Economic Sector.		
		A	M-IKK	S
1	Backward Linkage	0,1951	0,4606	0,2119
2	Forward Linkage	0,6044	0,3706	0,2086
3	Indirect Backward Linkage	1,3161	0,1244	1,3152
4	Indirect Forward Linkage	0,6171	0,9818	1,2344
5	Backward power of dispersion	1,3162	0,1176	1,2421
6	Forward power of dispersion	0,5828	0,9273	1,1658

Source: Data Calculated

Tables 01 and 02 show the effect linkages between economic sectors is calculated on the basis of consumer prices and producer prices. The values of the effects of hook-mengkait between economic sectors can be seen from: (1) the impact of rearward directly, (2) the impact of backward indirectly, (3) the impact of future directly, (4) the impact of future indirect, (5) the impact of the deployment force backward and forward for distributing impact forces.

Impact of Backward linkage is calculated on the basis of consumer prices and producer prices from the third sector is still relatively low below a value of 1. This means that the three sectors such as Agriculture, Manufacturing and Service, has the effect of latch-hooks to very

low, so it does not contribute the maximum to the growth of regional economies. For the three sectors needed cross-sectoral program to build the regional economic structure kuat. Dampak Bali more backward indirectly (Indirect backward linkage) was calculated on the basis of consumer prices has a value above 1 is shown by the agriculture sector and services sector amounted to 1.6272 by 1, 3473. While the manufacturing sector has a rearward impact value indirectly under one or amounted to 0.2053. Backward indirect impact is calculated on the basis of producer prices with a value above 1 is shown by the Agriculture sector and the service sector amounted to 1.3161 at 1.3152. The manufacturing sector has a value of backward indirect impact of 0.1244 or below one.

Impact forward (Forward linkage) calculated on consumer prices and producer prices indicated by the three key sectors such as agriculture, manufacturing and services remained low with a value below one. Impact fore indirectly (Indirect backward linkage) was calculated on the basis of consumer prices with a value above 1 is shown by the manufacturing sector and the service sector amounted to 1.0455 1.5735. Agriculture sector has a value indirectly impact the future under one or amounted to 0.5608. Fore indirect impact is calculated on the basis of producer prices with a value above the one just indicated by the services sector amounted to 1.2344. Meanwhile, Agriculture and manufacturing sectors have a future impact value indirectly in the category of low or below the one that is equal to 0.6171 and 0.9818.

Based on the impact force deployment backward (backward power of dispersion) is calculated on the basis of consumer prices that coefficient agriculture sector and the manufacturing sector has a value above 1 is equal to 1.7247 and 1.4279. While the manufacturing sector has the impact of the spread is still low at 0.2176. The impact of the spread calculated on the basis of producer prices shows that the coefficient value agriculture sector and the service sector has a value above 1 is equal to 1.3162 and 1.2421. While the manufacturing sector has the impact of the spread is still low at 0.1176, and even lower than the calculation on the basis of consumer prices. This means that the role of economic sectors such as agriculture and services have a very high output stimulant. If viewed from the force deployment backward (backward power of dispersion).

Degree of sensitivity or the impact of the deployment of the next (forward power of dispersion) is calculated on the basis of consumer prices with a high stimulant indicated by the manufacturing and services sectors over one that is equal to 1.1084 and 1.6678. While the agriculture sector is calculated on the basis of consumer price sensitivity is very low or at 0.5943. Degree of sensitivity to the producer price calculation with a value above one indicated by the services sector amounted to 1.1658. While agriculture and manufacturing sectors is still low degree of sensitivity to low at 0.5828 and 0.9273. Based on the future impact of the spread of the sectors of the economy, the manufacturing sector needs to be studied further, either in the form of research studies and the study of theory. Given the manufacturing sector as well as turunanya still be the focus of development and local government attention, because it has been deemed capable of helping the government program, especially the reduction of unemployment and poverty alleviation.

Power Distribution and degree of sensitivity

Based on the spread index and the degree of sensitivity of each sector of the economy, the manufacturing sector as well as small and medium enterprises have an index of the highest degree of sensitivity for fifteen years from 1995-2005 (CBS, 2012). This means that the manufacturing sector and small and medium industries have been using input from the sectors of agriculture and the services sector to the fullest. The industrial sector in the city of

Bekasi as the comparison shows that the final demand as a leading sector (leading sector) is shown the industrial sector (BPS, 2009). For the dependence between sectors needs to be maintained and developed more intensively through linkage program. This statement is also supported by research conducted by (Clark and Somavia, 2009), that the program antarsektor important to be built in order to maintain the existence of the role of the industrial sector. The more favorable manufacturing sector activity and craft industries will have an impact on other sectors such as the use of inputs from other sectors also increased.

Tabel 03. Power Distribution and degree of sensitivity Economic Sector

No.	Year	Dispersion economic sector based on consumer sector		
		Agriculture	Industry	Services
1	1995	0,8645	1,1503	0,9743
2	2000	0,8745	1,1110	1,0262
3	2005	0,8331	1,0740	0,9974
No.	Year	Degree of economic sector based on Consumer Prices		
		Agriculture	Industry	Services
1	1995	1,0850	1,7891	0,9518
2	2000	0,9826	1,5444	1,2065
3	2005	0,9436	1,9043	0,9680

Sources: Data Calculated

Based on the degree of sensitivity among the economic sectors in the future, then the manufacturing sector and the handicraft industry has an impact forward with a tendency sensitivity, the better. Because of the manufacturing sector and the handicraft industry has a sensitivity for 15 years higher than most sectors of Agriculture and the service sector. Thus the manufacturing sector and their children, especially in the province of Bali ahead need to be maintained or enhanced role and contribution in GDP growth reviewing Bali. But the continuation calculation of linkages between economic sectors on the basis of the calculation on the basis of the consumer price and producer price.

The result of the calculation on the basis of consumer prices and producer prices sectors of agriculture, manufacturing and services indicates the spread and degree of sensitivity are varied. On the basis of both of these calculations, the power distribution and the degree of sensitivity of economic sectors in 2005-2009 are shown in Table 04 below.

Table 04. Power of Dispersion and Degree of Sencitivity Economic Sector

Power of Dispersion based on Consumer Price				
No.	Indexs	Agriculture	Industry	Services
1.	Power of Dispersion	1,7247	0,2176	1,4279
2.	Degree of sensitivity	0,5943	1,1084	1,6678
Degree of Sensivity Based on Producer Price				
No.	Indexs	Agriculture	Industry	Services
3.	Power of Dispersion	1,3162	0,1176	1,2421
4.	Degree of sensitivity	0,5828	0,9273	1,1658

Source: Data Calculated

The result of the calculation coefficient and the description above, can be prepared a summary of the power distribution and the degree of sensitivity of the manufacturing sector and craft industries in Bali based on input-output analysis method as shown in Table 05 below.

Tabel 05.Criteria of Power Dispersion and Degree of Sensitivity

Tahun	Economic Sector Ekonomi					
	Agriculture		Industry		Jasa	
	Disperssion	Sensitivity	Disperssion	Sensitivity	Disperssion	Sensitivity
1995	Lower	Lower	High	High	Lower	Lower
2000	Lower	Lower	High	High	High	Lower
2005	Lower	Lower	High	High	High	Lower
2009 _k	High	Lower	Lower	High	High	High
2009 _p	High	Lower	Lower	Lower	High	High

Source: Data calculated. ...^k = consumer price
...^p = Producer price

Impact of multiple revenue due to rising demand for the end of a sector can be measured per unit of two types, namely the revenue impact of Type I and Type II revenue impact. Assess the impact of multiple revenue type I and type II as shown in the following table:

Table 06. Income Generation Linkage

Income Generation Linkage	Value of Income Generation Between Sector		
	Agriculture	Industry	Services
Type I	0,18517	0,10619	0,02671
Type II	0,16399	29,99697	22,79612

Source: Data Calculated

Table 06. shows that the impact of multiple revenue type I does not provide significant benefits to the tendency of household consumption in each sector. However, the calculation of the impact of type II multiple revenue, the revenue for the benefit of consumption trends in the manufacturing sector and the service sector. It is in line with research conducted by (Tellegen, 1993), that the non-agriculture sectors such as manufacturing and services sectors in the transaction is supported by knowledge and market information to keep the linkage of production to meet the needs of the community. Based on calculations by the method of analysis Input-Output index shows the deployment of low and high sensitivity index does not necessarily have a trickle down effect is high. These results were also confirmed by research conducted by (Patro, et.al, 2005) found the sensitivity manufacturing index amounted to 1,715 is high have very low trickle down effect.

Sensitivity index lower manufacturing sector has the potential trickle down effect will give a high enough in the province of Bali. Such conditions should also be strengthened with reinforced intersectoral linkages activity program structure. Antarsektor high index also has the potential to have a polarizing effect and backwash effect. This statement is proved by the leading sector in Bali dominated by the tourism sector, but the impact multiple income lower than the manufacturing sector. To reduce the polarization effect and backwash effect on the one hand, and on the other to increase the trickle down effects and spread effect for government intervention through economic policies that favor the few sectors still weak empowerment. Economic policies need to be done through: (1) Linkage intersectoral program linkage industries such as production, marketing, promotion and technology. (2) Linkage markets such as access to market information, market linkages, affordable consumer, market opportunities afford affordable. (3) Linkage risks such as the risk of loss dtimbulkan reduction among sectors in strengthening the regional economic structure.

CONCLUSION

Analysis industry upstream-downstream linkages Bali is to provide an overview of the economic transactions between sectors in the province of Bali. Small and medium industries in Bali has the potential to improve the impact of multiple income people of Bali, so it can help the government alleviation of unemployment and poverty. Evidence of this is shown by the Income Generation II linkage mode manufacturing sector. Despite the prevalence and sensitivity of the sector is still low, the necessary economic antarsektor reviewed and strengthened, so that the composition of the GDP contribution to the fullest.

Effects interwoven among the economic sectors seen from the calculation of the consumer price and producer prices showed that: (1) the manufacturing sector which has a rearward impact either directly or indirectly, more than in the service sector and agriculture. However, these three sectors still have an impact to the rear and to the front is still low. (2) The manufacturing sector has an indirect impact backwards and forwards on the calculation of consumer and producer price is high compared to agriculture and the service sector. On the other hand the manufacturing sector has a direct impact to the front is not lower than the agriculture and services sectors.

Power distribution and power between economic sectors sensitivity calculation of the consumer price indicated by the manufacturing sector the most good, because it has a value above the value. Power producer price sensitivity calculation shows the different values on the manufacturing sector. The manufacturing sector has a degree of sensitivity is very less if applied on the basis of the calculation of producer prices.

The calculation of the impact of third sector earnings multiple is very important because it can determine the level of quality of life of the household consumption trend carried on each sector of the economy. Impact of multiple revenue type II is able to confer benefits on consumption trends in the manufacturing sector and the service sector. But the impact of multiple agricultural sector income is still very low, so we need the government's attention to this sector. High sensitivity index does not necessarily create a trickle down effect is high, so we need more research studies.

Limitations

Input-Output Analysis is still limited, due to the support of empirical data is incomplete, the assumptions used, the difficulty of preparing a matrix table. Thus Input-Output analysis as a method to reveal the regional economic forecasting, requiring new methods for the assessment of development contributions and linkages between sectors of the economy is more complete.

RECOMMENDATION

By analyzing the Input-Output to small craft industries in Bali there are some things that need to be recommended are: Lack of equipment with data that can be accessed from the report / document from an institution, so that the analysis result is less than optimal. The difficulty to interpret the results matrix table, because there is a different understanding, so necessary research studies with multiple comparison. The assumption of this analysis can limit the exposure assessment and description, so we need more research analyzes the new and more comprehensive analysis method.

REFERENCES

- Arsyad, Lincolin. 2002. *Pengantar Perencanaan Pembangunan Ekonomi Daerah*. Edisi Kedua. Yogyakarta: Fakultas Ekonomi Universitas Gajah Mada.
- Badan Pusat Statistik, 2010. *Produk Domestik Regional Bruto Provinsi Bali 2005-2009*. Denpasar: Kerjasama Bappeda Provinsi Bali dan Badan Pusat Statistik Provinsi Bali.
- Bank Indonesia, 2012. *Kajian Ekonomi Regional Provinsi Bali*, Denpasar: Laporan KER Triwulan I
- Bank Indonesia, 2011. *Kajian Ekonomi Regional Provinsi Bali*, Denpasar: Laporan KER Triwulan I
- Badan Pusat Statistik Indonesia, 2012. *Perkembangan Beberapa Indikator Utama Sosial-Ekonomi Indonesia*. Katalog BPS: 3101015, Mei 2012. <http://www.bps.go.id/aboutus.php?booklet=1>
- Bonvecchi, Alejandro. 2009. *Conceptualizing Citizen-Politician Linkage: Political Competition, Income-Generation Alternatives, and Public Policy Portfolios*. Santiago: Chile.
- Clark, Helen. Dan Somavia, Juan. 2009. *Policy for Post Conflict Employment Creation Income Generation and Reintegration*. Geneva: United Nations Development Policy.
- Dietzenbacher, Erik and Michael L. Lahr, eds. *Wassily Leontief and Input-Output Economics*. Cambridge University Press, 2004.
- Hirschman, A.O. 1958. *The Strategy of Economic Growth*. New Haven, Yale.
- Isard, Walter et al. 1960. *Methods of Regional Analysis: An Introduction to Regional Science*. MIT Press.
- Isard, Walter and Thomas W. Langford, 1971. *Regional Input-Output Study: eollections, Reflections, and Diverse Notes on the Philadelphia Experience*. The MIT Press.
- Lahr, Michael L. and Erik Dietzenbacher, eds 2001. *Input-Output Analysis: Frontiers and Extensions*. Palgrave.
- Leontief, Wassily W. 1986. *Input-Output Economics*. 2nd ed., New York: Oxford University Press.

- Miller, Ronald E. and Peter D. Blair, 1985. *Input-Output Analysis: Foundations and Extensions*. Prentice Hall.
- Miller, Ronald E. and Peter D. Blair. 2009. *Input-Output Analysis: Foundations and Extensions*, 2nd edition. Cambridge University Press.
- 39
- Miller, Ronald E., Karen R. Polenske, and Ronald Z. Rose, eds, 1989. *Frontiers of Input-Output Analysis*. New York: Oxford UP, 1989. [HB142 F76 1989/ Suzz].
- Miernyk, William H. 1965. *The Elements of Input-Output Analysis*. London: Prentice Hall.
- Myrdal, Gunnar. 1957. *Economy Theory and Underdeveloped Region*, London: Methuen.
- Patro, Bhagabata; Patra, Aditya Kuma; Acharya, Nilachala. 2005. Sectoral Interdependence and Growth of Orissan Economy: An Input-Output. *Working Paper*, Juni 2005
- Soemarno, 2011. *Analisis Input-Output*. PSPDAL.PDIP.PPS. PPUB, Oktober.
- Suyana Utama, 1991. Pengembangan Industri Kecil di Kabupaten Gianyar Provinsi Bali. (Tesis) IPB: Program Pasca Sarjana.
- Suyana Utama, 2012. *Metode Kuantitatif : Input-Output dan Social Accounting Matrix*. Universitas Udayana: Program Pasca Sarjana.
- Sukirno, Sadono. 1976. *Beberapa Aspek Dalam Persoalan Pembangunan Daerah*. Cetakan kesatu. Universitas Indonesia: Lembaga Penerbit Fakultas Ekonomi.
- Sjafrizal, 2012. *Ekonomi Wilayah dan Perkotaan*. Jakarta: Rajawali Pers.ISBN: 978-979-769-454-8.
- Tellegen, Nina. 2009. Rural Employment in Sub Saharan. Africa: Studi Centrum. *Working Paper*. Vo.18/1993. ISSN: 0924-953