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The Economic Effects and Distributional Implications of Globalisation and Foreign Tourism Boom in the Indonesian Economy: A CGE Assessment

By

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ABSTRACT

A tourism-CGE model representative of the Indonesian economy is developed based on modified version of the Indonesian SAM 1993, for analysing the economic effects and distributional implications of globalisation and foreign tourism boom. Two policy changes are simulated to represent partial and full-scale globalisation. The former suggests that it will increase the amount of foreign trade and availability of products in the domestic economy. This in turn stimulates production activities, improves macroeconomic performance and welfare, as domestic absorption, household income and consumption increase. Foreign tourists are better off for they can consume more with their benchmark spending level. The trade balance and government deficit, however, worsen, as imports increase more than exports and the government maintains its level of spending despite its 'lost' income from tariff reductions. This policy has favourable impacts on the income distribution of rural households even though their incomes decrease. Urban households and farmers benefit from this policy as shown by increases in their both absolute and relative income levels. But their income distributions slightly worsen. The full-scale globalisation results in much higher macroeconomic performance, welfare, and improved income distribution of agriculture households. The government, however, continues to bear the adverse effects due to its consumption behaviour and initial budget deficits. The foreign tourism boom is then introduced in each scenario to complete the analysis. Policy implications of this study call for the government to reduce its reliance on revenues from import tariffs and indirect taxation, but to really embark on globalisation. A sensible way for doing this is to start with removal of distortions in the domestic economy which can then be followed by full-scale globalisation. The growth of foreign tourism could be of an incentive in this case. By having less distorted domestic markets, the benefits from having global markets can be more fully realised. Globalisation, as measured here, seems to be 'foreign tourism'-friendly as they enjoy lower prices and increased availability of products, and hence is compatible with government efforts to attract more foreign tourism.

Keywords: **CGE, Globalisation, Indonesia, SAM, Tourism, Welfare**
JEL classification: **C68, D58, E62, L83, O53**

OUTLINE

I. INTRODUCTION

A. Tourism in the Indonesian Economy

Indonesia is the largest archipelago in the world, stretching along the equator: 5.110 km from East to West and 1.888 km from North to South. It consists of five major islands (i.e. Sumatra, Java & Bali, Kalimantan, Sulawesi, and Irian Jaya) and about 30 smaller groups.[1] The "emerald chain of islands" divides the Indian and Pacific Oceans, and is enriched with natural resources. With over 200 million inhabitants, it is currently the 4th largest country in the world, offering a vast range of tourism activities. Therefore, it has long been one of the popular tourist destinations.

Foreign tourism has long been an important and integral part of the Indonesian economy. For the last decade prior the 'crisis' (i.e. until 1997) has seen a strong growth in the tourism industry, with large increases in the arrivals of foreign tourist, tourist spending, and investment.[2] Growth of foreign visitors was more than 15% per year, contributing to the increase in foreign exchange incomes, as both foreign tourist's expenditure and length of stay increase.[3] In 1997, the number of foreign visitors was about 5.2 million, contributing to foreign income of 6.6 billion US$ (about 2.97 % of GDP[4]). In 2005, the number is expected to be around 11 million, generating foreign income of more than 15 billion US$. In terms of employment creation, tourism sector in Indonesia contributed to 16% of the total jobs created in 1995, and in 2007 it is estimated that 1 in 11 of new jobs created is because of the tourism industry (Ministry of Education and Culture, Statistics Indonesia and Kompas[5] various issues). Despite its crucial role, there has been a lack of comprehensive studies on the economic impacts of foreign tourism in the Indonesian economy, especially in the form of economy-wide modelling using Computable General Equilibrium (CGE). Previous CGE applications had no particular concern on the tourism issues.[6] Therefore, this is the first attempt at developing such model and in line with similar works on different economies (see for

[1] The total number of islands in Indonesia is about 17.508, representing the far largest part of the Austro Malayan archipelago (The Indonesian Naval Hydro-Oceanographic Office).
[2] This is in line with the global growth of tourism industry (see Diamond 1997, and WTTC & WEFA, undated)
[3] See http://www.bps.go.id for detail
[4] World Development Indicator Data Base, World Bank (http//www.worldbank.org).
[5] One of the Indonesian leading newspapers.
[6] See Behrman et al. 1989, Lewis 1991, Devarajan and Lewis 1991, Roland-Holst 1992, Thorbecke et al. 1992, Sugiyarto 1994, Temenggung 1995, Azis 1996a and 1996b, Wuryanto 1996, Devarajan et al. 1997, and Robinson et al. 1997, for CGE applications on the Indonesian economy. Alternatively, see Sugiyarto 2000 for a comprehensive overview of those models and the latest CGE applications on the Indonesian economy.

instances Adams and Parmenter 1991, 1994, & 1995 for the Australian economy, Zhou et al.1977 for the Hawaiian economy, and Blake 2000 for Spain[7]).

Foreign tourist is treated as an economic institution, which consumes certain kinds of exported commodities (i.e. Services).[8] This treatment is in line with the World Tourism Organisation (WTO) recommendations on the Tourism Satellite Account (TSA) that some parts of the exports should be attributed to the foreign tourism. This principle is then adopted for modifying the existing Social Accounting Matrix (SAM), which forms the framework for the CGE model developed subsequently.

B. Main Purposes and Objectives

The main purpose of this study is to develop a tourism-CGE model representative of the Indonesian economy for a variety of analyses relevant to the on-going concerns and issues related to tourism. Therefore, the models' development and its use in counterfactual analysis[9] are directed towards:

- Understanding the main characteristics of the Indonesian economy as reflected in the SAM, especially in with regard to the existing foreign tourism and inevitably globalisation process.
- Analysing the economic effects and distributional implications of globalisation process in the context of the existing foreign tourism.

Given how the foreign tourism is modelled, it is important to note that this study is not intended to measure the 'actual magnitude' of the tourism impacts (as commonly found in the typical fixed-price Input-Output and SAM based models, such as in terms of foreign exchange income, employment etc), but rather on the overall directions of the effect on the production activities, factor markets, foreign trade, welfare, income distribution and so on (i.e. the general equilibrium economy-wide effects).

On the other hand, the globalisation process is represented by changing in the government policies towards more open international trade. This seems inevitable given the Indonesian government's commitments to the World Trade Organisation (WTO), Asia-Pacific Economic Co-operation (APEC), and Association of South East

[7] In addition to these 'flexible price' CGE models, there have been some 'economic impact' studies using 'fixed-price' Input-output or SAM-based multiplier models. See for instances Bergstrom et al. 1990, Fletcher 1989, Heng & Low 1990, Khan et al. 1990, West 1993, Loomis 1995, and Wagner 1997, Huse et al. 1998).

[8] In reality, foreign tourists consume nearly all kinds of commodities (see for instances TSA for Canada, New Zealand, Norway and USA). However, in the case of lacking for such information the assumption adopted in this study seems very reasonable.

Asian Nations (ASEAN) members towards more free international trade.[10] Furthermore, the lowering of tariffs, in addition to other measures such as domestic tax reform and replacing quantitative restrictions with tariffs, has also been part of the policy package of the IMF/World Bank conditional loans, in which the Indonesian government is currently involved.[11] All are in a hope to distil some lessons for designing better economic policies in the future which is also compatible with the development of foreign tourism.[12]

C. Methodology of Analysis

Having set up the model, the analysis is conducted by: (i). Setting up the types of appropriate simulations given the issues concerned. (ii). Determining the variables concerned and then developing or calculating their relevant economic indicators. (iii). Conducting simulations to produce counterfactual results. (iv). Comparing the counterfactual results with benchmark condition, and (vi). Analysing the results based on the variables concerned. In addition, sensitivity analysis is carried out to assess the robustness of the results, including the functional specification and non-calibrated parameters used in the model.

D. Organisation of Writing

The introduction section sets out the research background, main objectives, and methodology of analysis. It puts this study in its relevant context, highlighting its new features in the existing situation and modelling applications. Section two discusses the main features of the Indonesian SAM used, followed by descriptions of model main characteristics and development in the third section. The model is then used for analysing partial and full-scale globalisation, combined with foreign tourism boom. The result is presented in the last part, which includes sensitivity analysis, conclusions, as well as suggestions for further research and policy implications.

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[9] Comparing simulation results with benchmark conditions.

[10] The Indonesian commitments for more free trade with other members of APEC and ASEAN can also be thought as part of 'regionalisation'.

[11] Despite the fact that the Indonesian government has increasingly been reliant on import taxation as one of its income sources (and for protecting the domestic import-competing industries).

[12] Despite many criticisms on its adverse effects, tourism in Indonesia is expected to play more important role in the future (i.e. frequently termed as a *passport for development*), especially in the face of declining role of oil and dependency on low-wage labour intensive sectors. This can clearly be seen from the government latest efforts to attract more foreign investments in the tourism industry, by allowing 100 % foreign ownership, introducing tax holiday, and welcoming foreign professional workers in the tourism sector (Joint Statement of Tourism Ministers of the ASEAN countries in the 2nd ASEAN Tourism Meeting, Singapore 1999).

II. DESCRIPTION OF THE SAM USED IN THE MODEL

A SAM is basically a system of representing economic and social structure of a country (region) at particular time, by defining its representative economic actors/agents and recording their transactions. It is an accounting record for a whole economy. The disaggregation level and choice of representative actors depend entirely on the motivation underlying its development and the availability of data, so that there is no 'standard SAM'.[13] Entries in a SAM can be categorised into two groups, one that reflects flows across markets (i.e. representing product and factor markets) and the other that reflects nominal flows or transfer payments. The transactions are presented in a square matrix,[14] with its rows representing receipts and its columns recording expenditures. It then follows that every income has its corresponding expenditure, and the incoming and outgoing of any account must always balance.

The development of SAMs in Indonesia has been conducted continuously since 1975 as an integral part of its national statistical system. The first SAM (1975) was as a result of a collaborative work between the Central Bureau of Statistics (CBS), Indonesia, and the Institute of Social Studies (ISS), Netherlands. It was aimed at the measurement of social welfare (i.e. poverty and income distribution). The 1985 SAM was the first one developed fully by the CBS as a framework for analysing growth and income distribution as well as other social economic issues.[1] This work was followed by the development of successive versions, namely SAMs for 1990 and 1993. The modified version of the latter forms the basis for CGE model developed in this paper. **Table II.1** shows a schematic representation of the SAM.[15] It reflects the underlying motivation of the SAM development and the completeness of data availability.[16] The factor accounts receive factor incomes from both domestic activities and the rest of the world (ROW), while the current transfers are recorded in

[13] In a statistical system, a SAM provides complementary economic indicators, which concern not only the macroeconomic aggregates of the System of National Accounts (SNA) but also the socio-economic structure and distributional aspects of the economy. Accordingly, it can be thought of as a further development of input-output accounts, which concentrate only on the production side of the economy. It must be noted, however, that every SAM is only static image or 'snapshot' of an economy. Nevertheless it can provide the statistical basis for the development of plausible models when more than a static image is needed.

[14] As opposed to the double entry format of T-typed account (i.e. the one commonly used in the accounting report).

[15] The latest SAM for 1999 is just published in the time of writing up this study.

[16] Pyatt and Round (1977) argue that the main concern motivating SAM development can be seen from the way of ordering of the accounts. Putting factors in the upper left block, as in the case of Indonesian SAM, shows that the main concern is on the distributional aspects of income and not the structure of production. This kind of design is intended to capture the circular flows of income: from income generated by activities to factors, and from factors to institutions, which then create demand for goods and services.

the intersection of rows and columns of institutions (households, firm, government and ROW). These transfers constitute the non-factor incomes, which augment the factor income to yield the income of institutions.[17] The separation of commodity accounts from production accounts makes it especially useful for constructing models that focus on international trade (Robinson, 1989). It is also parallel to the System of National Account (SNA) suggestion that a SAM should be approached through commodity balances. Moreover, the disaggregation of commodities into domestically produced and imported, also provides a very good background for modelling imperfect substitutability characteristics between the two goods (Armington, 1969). Another distinct feature is the representation of trade and transport margins (TTM) as independent accounts,[18] implying that the production activities are measured at producer prices (i.e. the SAM records only the actual or direct value added generated by each activity). The SAM has not, however, incorporated assets or flow of funds so it cannot portray the working of financial markets.[19]

Table II.1: Schematic Representation of the Indonesian SAM 1993

	EXPENDITURE								
RECEIPTS	**1.Factors**	**2.Institution**	**3.Activities**	**4.TTM**	**5.Dom.Com**	**6.Imp.Com**	**7.Capital**	**8.Ind. Tax**	**9. ROW**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**	**(10)**
1.Factors a).Labour			Wages						
b).Capital			Profits/Rents						Remittance
2.Institutions a).Households	Factor Income	Transfers							Transfers
b).Firm	Factor Income	Transfers							Transfers
c).Government	Factor Income	Direct Taxes						Tax Income	Transfers
3.Activities				Transfers	Production				
4.TTM					Mark-up	Mark-up			
5.Domestic Comm.		Consumption	Intermediate				Investment		Exports
6.Imported Comm.		Consumption					Investment		
7.Capital		Savings							
8.Net Indirect Tax					Ind.Tax	Ind.Tax			
9.ROW	Remittance	Transfers				Imports	Transfers		

[17] By representing transactions in this way, the classification and disaggregation of factors might be set independently of those of institutions and therefore the underlying characteristic and policy concerns about factor markets and domestic institutions can be simultaneously accommodated. This provides fruitful information and strengthens the usefulness of the models developed subsequently.

[18] These accounts ‘collect’ incomes from domestic and imported commodities, which are then paid to the corresponding domestic commodity account, namely 'trade’ and ‘transports’ services. In modelling context, this provides an additional tool for policy experiments since the TTM can be thought as 'indirect taxes' (mark-up) charged by ‘private’ sectors that can also be affected by government policy. Thus, it is possible to assume that more competitive industry will ‘charge’ lower TTM.

[19]The exclusion reflects the weak assumption underlying the saving generation in the economy and in many cases its overall accuracy is also reduced (see Roe in Pyatt and Round (Eds.), 1985). This in turn will affects the main feature of the model developed subsequently. There were attempts to accommodate flow of funds in the Indonesian SAM 1980. See for instances Roland-Holst, 1992 and Thorbecke 1992. From the detailed SAM (see detailed disaggregation in **Table II. 2**), it can be seen that various issues commonly suggested in the development of a SAM (see for instance Thorbecke in Pyatt and Round, 1985) have already been accommodated. Asset distributional features such as human capital (skill) land tenure system and ownership or access to capital have been explicitly included in the specification of actors. Agriculture sector has also had special attention as can be seen from the very detailed disaggregation of its labour and households. Regional dimension (urban/rural) has also been explicitly expressed, as well as attempt at accommodating some 'real' variables such as measuring the number of workers in terms of equivalent worker, consumption on calorie (calorie intake), and others.

In modified version, labour was categorised into 8 groups based on a combination of sector, type of workers, and job status (wage and non-wage),[20] while capital was disaggregated into 5 categories based on the ownership and the nature of the capital.[21]

Table II.2: SAM Classifications in the Original and Model

DESCRIPTION					Original	Model
(1)	(2)	(3)	(4)		(5)	(6)
FACTOR OF PRODUCTION	LABOUR	Agriculture-wages	Rural		1	1
			Urban		2	
		Agriculture-non-wages	Rural		3	2
			Urban		4	
		Production-wages	Rural		5	3
			Urban		6	
		Production-non-wages	Rural		7	4
			Urban		8	
		Clerical-Wages	Rural		9	5
			Urban		10	
		Clerical-non-wages	Rural		11	6
			Urban		12	
		Mng/Professional-Wages	Rural		13	7
			Urban		14	
		Mng/Professional-non-wages	Rural		15	8
			Urban		16	
	CAPITAL	Non Establishment	Land and other agriculture		17	9
			Own-occupied house		18	10
			Others-rural		19	
			Others-urban		20	
		Establishment	Private domestic		21	11
			Government		22	12
			Foreign		23	13
INSTITUTION	HOUSEHOLD	Agriculture	Wages		24	14
			Small farmer		25	15
			Medium farmer		26	16
			Large farmer		27	17
		Non Agriculture	Rural	Lower group	28	18
				Dependent group	29	19
				Higher group	30	20
			Urban	Lower group	31	21
				Dependent group	32	22
				Higher group	33	23
	Firm				34	24
	Government				35	25

DESCRIPTION		ORIGINAL			MODEL		
		SECTOR	DOM. COM.	IMP. COM.	SECTOR	DOM. COM.	IMP. COM.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Food Crops	36	60	82	26	46	64
SECTOR	Other Crops	37	61	83	27	47	65
	Livestock	38	62	84			
	Forestry	39	63	85			
	Fisheries	40	64	86			
	Main Mining (Coal, Oil, Gas)	41	65	87	28	48	66
	Other Mining	42	66	88			
	Food Processing	43	67	89	29	49	67
AND	Textile	44	68	90	30	50	68
	Construction	45	69	91	31	51	69
	Papers and Metal products	46	70	92	32	52	70
	Chemical Industry	47	71	93	33	53	71
COMMODITY	Utilities (Elect. Gas & Water)	48	72	94	34	54	72
	Trades	49	73	95	35	55	73
	Restaurant	50	74	96	36	56	74
	Hotel	51	75	97	37	57	75
	Land Transport	52	76	98	38	58	76
	Other Transports & Comm	53	77	99	39	59	77
	Bank and Insurance	54	78	100	40	60	78
	Real Estate	55	79	101	41	61	79
	Public Services	56	80	102	42	62	80
	Personal Services	57	81	103	43	63	81
Trade Margin		58			44		
Transport Margin		59			45		
Capital Account		104			82		
Net Indirect Taxes		105			83		
Rest of the World		106			84		

[20] The wage term refers to employee while the non-wage category includes employers, self employed and family workers. In the Indonesian economy context, the former tends to be associated with higher wage income group as most of the latter consists of self employed and unpaid family workers. In the original SAM, the workers were then further disaggregated into those who live in urban and rural areas. However for modelling purposes it seems no justifiable reason (i.e. distinctive differences) for splitting the two since the area of residence does not affect the behaviour of workers in the production function. In any case, the urban and rural feature will be captured in the household categorisation. See the detailed SAM available from the CBS.

[21] Land and other agriculture capital, for instance, were combined into one category, while private domestic capital was divided into two, owned by corporate and non-corporate institutions. The other two categories of capital are government and foreign capital.

Households were classified into 10 groups, based on income sources, area of residence, and job status.[22] Firstly, households are divided into agriculture and non-agriculture households. The former is then split into employee land-less farmer, small farmer (land size < 0.5 hectare), medium farmer (between 0.5-1.0 hectare) and large farmer (>1.0 hectare). For the non-farmer, the disaggregation was based on area of residence (urban and rural), level of income, and a combination of occupation and job status. Based on these variables, the non-farmer in each area was then classified into low, dependent and high-income groups.[23] Notice that the household classification has been developed based on 'real' variables, which can easily be identified for policy targeting as commonly suggested in the development of a SAM. The categorisation turns out to be very useful for developing income distribution indicators, since the income ratio between groups in each sector or across sector can be used as a proxy of income inequality index.[24]

Production activities are classified into 18 categories and the commonly used assumption of one sector produces only one good was adopted, so that classifications for sector and commodity are exactly the same. **Table II.2** shows detailed classification of the original SAM and the corresponding classification used in the model, respectively.

III. MAIN CHARACTERISTICS OF THE MODEL

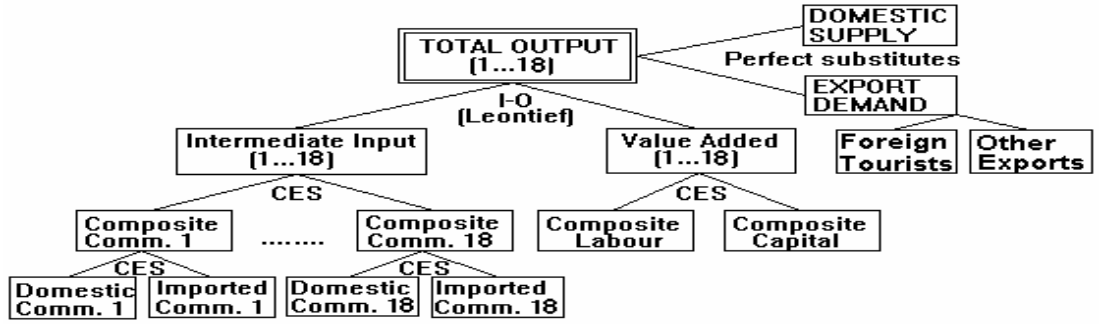
In the model there are 18 sectors (and commodities for both domestically produced and imported), 8 types of labour, 5 kinds of capital, 10 categories of household, and economic institutions such as firms, the government, and the rest of the world (ROW). Production is specified as two-level nesting of CES functions and total production is allocated to domestic demand and exports, which are then split into two categories: Services (S), and Agriculture & Manufacturing (A & M). The former is assumed to be consumed by foreign tourists, while the latter is allocated for other exports.[25] Producers are assumed to be indifferent between selling domestically

[22] The economic status refers to the household head or the highest income earner.
[23] The dependent household refers to the households whose head or highest income earner in the household does not work anywhere (i.e. not in the labour force), relying instead on transfer incomes (from relative, government etc).
[24]For measuring direction of changes in the income inequality, this method seems justifiable, especially in the lack of other inequality indicator such as the Gini Ratio.
[25] The assumption and treatment of foreign tourism seem to be the best one, considering that the main concern of a CGE counterfactual analysis is more on the general equilibrium effects or direction of changes. Fluctuations in the actual foreign tourist consumption should be reflected in the fluctuations of service exports, as most of the

and exporting -as they receive the same price, [26] while the 'small country' assumption is adopted for imports. Total domestic demands are derived from composite commodities of domestically produced and imported products. Fixed and 'planned'[27] consumption patterns are respectively assumed for households and the government, which makes government saving residual. Aggregate investment is accordingly fixed to reflect the 'investment driven' nature of the economy. [28]

A. Production/Supply Side

Detail nesting in the production functions and output allocation in the model can schematically be presented as follows:



Domestic output is specified as Input-Output (Leontief) function of intermediate inputs and value added. The intermediate inputs is CES aggregation of domestically produced and imported commodities, while the value added is specified as CES function of composite labour and capital. Detailed CES nesting was employed to form the composite labour and capital. At the lowest stage, similar types of labour (i.e. farmers, production workers, clerical, and professional) and capital (i.e. corporate capital) were respectively aggregated. Production, clerical and professional workers were aggregated to form 'non-farmer worker', which was then combined with farmer to form composite labour. On the capital side, the aggregated 'corporate capital' (consists of foreign, government, and corporate), was combined with 'non-corporate capital' to form the composite capital.[29] Schematically, the nesting can be presented as:

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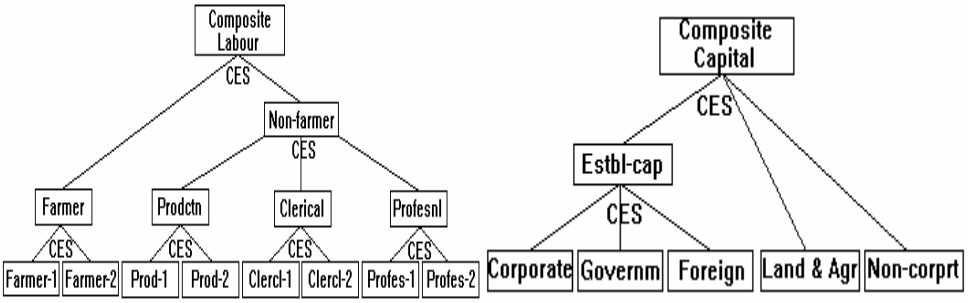
service exports are actually consumed by foreign tourists. For a better treatment, a more refined method for estimating foreign tourist consumption should be used prior the development of the CGE model.

[26] By employing this specification, it is possible to introduce some elasticity in the export demand of domestic products in the world market.

[27] It is not affected by commodity prices and the government's income.

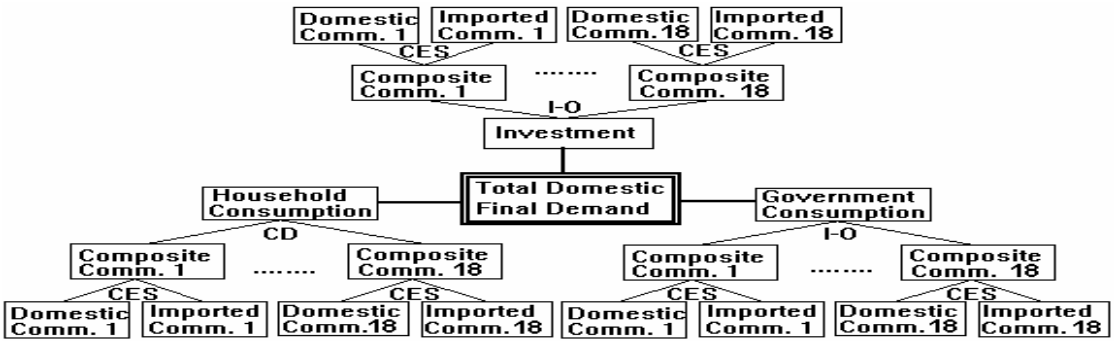
[28] This specification was chosen to reflect the fact that the Indonesian government (i.e. the main economic actor) has always set its budget and other macroeconomic targets at the beginning of year, which in turn affects the economic behaviour of both firms and households.

[29] This specification allows for substitution between different types of labour with similar characteristics, different types of labour and capital with different characteristics and between labour and capital in general. The



B. Demand Side

Total final demand (derived from composite commodities) consists of consumption (household and government) and investment, which is generated by the aggregated saving-investment account. Schematically, it can be presented as follows:



The government and domestic firms have access to foreign borrowing for balancing its budget deficit,[30] contributing to the total foreign loans. In addition, there are transactions (i.e. direct taxes and other transfers) among institutions (i.e. the ROW, government, firms and households) that should be portrayed in the models. This adds a new feature of the model, which is very crucial for income distribution issue.[31] In addition to the main functional specifications for production and final demand above, there are other equations in the model to define prices (i.e. for activities, commodities, and factors), incomes and expenditures (i.e. for institutions), and to balance the model.

degree of substitution decreases as the similarity between labour and/or capital decreases. This is reflected by a decrease in the degree of substitution (i.e. the elasticity values used) as we move from the lowest level to highest level of the nesting.

[30] Since 1967, the Indonesian government has continuously adopted a 'balanced budget' principle, where its deficits can only be financed by foreign funds (regarded as revenues) and not by government's domestic debt securities or printing money.

[31] Unfortunately, this issue was neglected by the previous CGE applications in the Indonesian economy (except Sugiyarto 2000).

IV. SIMULATION RESULTS

A. Globalisation

Two types of scenarios are simulated here, namely: partial and full-scale globalisation. Partial globalisation is modelled by *a cross-the-board* reduction in the tariffs of imported commodities. This is to reflect the government reluctant attitude towards globalisation which is clearly shown in its increasing reliance on the revenue from import tariff.[32] In this scenario, government is assumed to reduce only the import tariff (as it also seems inevitable for the reason discussed before), while maintaining all kinds of taxation in the domestic economy. In the next scenario (full-scale globalisation), the government is more *pro-business* by balancing the 'involuntary' (i.e. forced externally) import tariff cuts with a 'voluntary' removal of distortions in the domestic market to *level the playing field*. The latter is represented by the same reductions (i.e. 20%) in the indirect taxation levied on the domestic commodities. [33] Another reason for combining the two policies is that a full scale globalisation should involve policies to reform domestic taxation, which includes simplifying tax structure, broadening tax base, levying lower and uniform tax rates and exempting taxes on intermediate inputs. The broadening tax base and lowering tax rate usually involve reductions in the level of indirect taxation on domestic commodities.

The results of introducing the two scenarios are then analysed by examining their effects on key variables such as macroeconomic aggregates, external performance, welfare, household consumption, incomes and income distribution, and foreign tourist consumption. Descriptions and measurements of these concerned variables are summarised in **Table IV.1**. **Table IV.2** presents the indicators, which are calculated as percentage changes from the benchmark data, except for the terms

[32] Despite the government's trade liberalisation efforts, especially after 1982 (see Sugiyarto 2000 for detail discussion on the economic reform measures adopted by the Indonesian government). In 1985, revenue from import tariff contributed to 4.1% of total government income, while in 1993 its share doubled to 10.3% (Calculated from the Indonesian SAM 1985 and 1993).

[33] Strictly speaking, the same reductions of 20 % in import tariff and indirect taxes can not be said as comparable or as the fairest way in *levelling the playing field* (or even for increasing the competitiveness of domestic industry). In term of magnitude (i.e. from the government revenue perspective), the indirect taxation on domestic commodities contributed to 25.8 % of government incomes in 1993, while the revenue from import tariff was about 10.3% (in terms of GDP, the ratios were 1.03 % and 0.41 %, respectively). The two kinds of reduction also have different price effects, as the former will be more fully 'translated' in the domestic economy than that of the latter. This is true since domestic economy is a 'price-taker' in the imported commodity market (i.e. as a consequence of adopting the small country assumption). This reflects substitution characteristics between imported and domestically produced goods which is then also reflected in the constant elasticity of substitution (CES) function.

of trade (TOT).[34] In most cases, a positive number reflects an increase or improvement, and vice versa, except for income distribution indicators, where positive numbers reflect an increase in income inequality (worsening of income distribution).[35]

1. Partial Globalisation

In addition to a reduction in the government revenue from tariff, direct effect of this policy is a lower price of imported commodities in the domestic market.[36] This will increase demand for imported products, contributing to an increase in the availability of products in the domestic economy. On the other hand, demand for domestically produced goods in the domestic market decreases as their prices become relatively more expensive. This will induce producers to export more and in turn to produce more, as some of the lower price imported commodities are also used for intermediate inputs. The stronger price effects in the import side makes imports increase higher than exports, worsening the trade balance accordingly. The increase in the demand for imported products is also higher than the reduction in the domestic demand for domestic products that makes total supply of products in the domestic economy still increases. The overall effects seem to create more economic activity, thus increasing employment level and GDP.

Table IV.2 column (2) summarises the results of introducing import tariff reductions on the variables concerned measured by percentage changes from the benchmark. It shows that the cuts increase the amount of imports and foreign trade, thus increasing the availability of products in the domestic economy (i.e. increase by 0.14 %). This in turn creates additional demand and stimulates production activities which all end up with higher both GDP (increase by 0.02%) and overall economic activity (employment increase by 0.4%). More detailed results[37] show a decrease of outputs of highly protected sectors such as chemicals, paper and metal, as more substitute products available from import. Other adverse effects of this policy are the worsening of the trade balance (i.e. imports increase more than exports) and

[34] TOT=(exports at current price/import price deflator) – export at constant price. A positive TOT indicates export prices are relatively higher than import prices and vice versa. By definition, TOT at the benchmark equals zero, since import and export price deflators are equal. Given the way the TOT was calculated, it is possible to construct a Gross Domestic Income (GDI), which is equal to GDP at market price + TOT. Some authors argue that GDI is actually a better economic indicator than GDP at constant price because it includes positive and negative benefits of changes in prices in the surrounding world.

[35] Percentage changes in balance of payments (BOP) deficits and trade balances should also be calculated and interpreted carefully since the absolute (actual) numbers can switch from negative to positive.

[36] Domestic economy is a price taker for imported commodity market, so that a reduction in the import tariff will be fully translated into a reduction of the domestic price of the imported commodity.

government current account deficit. The deficit deteriorates significantly due to the government's 'loss of income' and adherence to its 'planned consumption'.

Welfare improves, as can be seen from the increases in the total domestic absorption and household real consumption. This policy also has favourable impacts on income distribution of rural households (shown by a reduction in the household income ratio of top to bottom groups), even though their incomes decrease. Agriculture and urban households benefit from this policy as shown by increases in their income levels, even their income distribution slightly worsens. The urban households seem to get the most benefit, as their relative income also increases (measured by income share). The overall impact on the households is favourable as their income and real consumption increase.

Foreign tourists are also better off as they can consume more with their benchmark level of spending. Their consumption on hotel and restaurant (i.e. main foreign tourist commodities) increases by 0.08%, as well as those on other services so that their consumption on services increases by 0.06%. As it was assumed that there is no change in the total income (equals total spending) of foreign tourist during the simulation[38], the positive effects of increasing foreign tourist consumption in the economy could, in fact, be higher as the lower price of domestic commodity can encourage them to consume more (i.e. due to price and income effects) or even attract more of them to come (i.e. due to increasing demand for foreign tourists[39]).

2. Full Scale Globalisation

The positive effects of partial globalisation discussed above seem to be amplified in the full-scale globalisation (i.e. combining import tariff reductions with reductions in the indirect taxation on domestic commodities). The reason for this can be traced back from the effects of introducing the indirect tax reductions. On the production side, this policy will reduce domestic prices of domestic products, making them more competitive in the domestic market. This, in turn, stimulates domestic production, creates more employment and therefore increases GDP.[40] The increases in domestic production and employment raise household incomes, which in turn

[37] Available from the authors.

[38] Recall that in the model, foreign tourist is assumed to receive a given 'transfer income' from the ROW which is all then spent in the domestic economy.

[39] See Sinclair and Stabler 1997 for discussion on the microeconomic foundation of tourism demand as well as for the general introduction on the economics of tourism. Smith 1994, and Watson and Kopachevsky 1994 also provide more basic understanding of tourism as a commodity. In addition, studies in the UK indicated that price is a crucial factor for most tourists when choosing a holiday destination (British Tourist Authority, 1998)

creates more demand for goods in the domestic market. Imports increase accordingly to meet the higher domestic demand, but exports decrease due to the fact that domestic market becomes more profitable for the producers. Therefore the trade balance deteriorates. For the government, this policy will reduce its income (from indirect taxation) and therefore worsen its deficit, as the 'lost income' has made the government less able to finance its 'planned' consumption. In addition to improved macroeconomic performance, this policy also has positive impacts on welfare, as domestic absorption, household income and household real consumption increase.

Table IV.2 column (3) summarises the effects of the full-scale globalisation. The direct effect of the combined cuts is a decrease in the domestic prices of imported and domestic commodities. The same demand pressure coming from the higher household incomes (as a result of the second policy), now magnifies the increase in the import demand due to lower import price (as a result of the first policy). The trade balance, therefore, deteriorates further as imports increase further while the positive impact of import tariff cuts on exports was nullified by the negative effects of indirect tax reduction on the exports. The end results show that imports increase by 1.84% while exports decrease by 0.70%, making trade balance deteriorates by 29.78%. The increasing availability of products in the domestic economy creates additional demand and stimulates production activities which all end up with higher both GDP (increase by 0.48%) and overall economic activity (employment increase by 0.98%). Government continues to bear the adverse effects as seen from its current account deficit. Welfare improves, as can be seen from the increases in the total domestic absorption (increase by 1.12%) and household income (1.54%) and household real consumption (1.79%). This policy also has favourable impacts on income distribution of agriculture households but not to the other types of households, even though the incomes of all household categories increase.

Foreign tourist consumption on hotel and restaurant increases by 1.46%, while consumption on all services decreases by -0.24%. This is due to increases in the prices of public services such as transports and communication, banks, and other public services. Therefore its reasonable to assume that the foreign tourists would still be better off as they will, in general, be paying for a lower price for the products and services they consume.

[40] Detail results also show expansions in all sectors, except in highly protected sectors such as mining and chemicals. The most expansions are recorded in the trade, food processing, and hotel and restaurant sectors.

B. Increase in the Demand of Foreign Tourists

As was quoted in the first section, growth of international tourism in Indonesia is expected to be more than 15% per year. However, in the face of prolonged economic and then political crisis, the forecast might be too optimistic.[41] In this section, therefore, a 10% increase[42] in the foreign tourist demand is simulated which is then combined with the previous two simulations. Table **IV.2** column (4)-(6) summaries the simulation results. The increase in the foreign tourism demand will certainly create more production (GDP increase by 0.1%) and employment (increase by 0.2%), but at the same time put pressure on the domestic price. This is clearly shown in the household account. Household income increases by 0.3%, while its real consumption increases only by 0.1%, as a result of the higher domestic price (overall increase by 0.2%). Exports increase by a larger amount than imports, making an improvement in the trade balance. The same improvement is also applied to the BOP deficits, as the government and firm deficits decline.

Welfare improves, as domestic absorption and household real consumption increase. Incomes of all types of household increase, but income share of agriculture household slightly decrease. Rural and urban households (i.e. non-agriculture) benefit from this policy as shown by increases in their income levels and shares, even though their income distributions slightly worsen. The 'foreign tourism boom' seems to have favourable impacts on income distribution of rural households. Despite the 10% increase in the foreign tourist's demand, their consumption actually increases by 9.3%, as a result of the higher domestic price discussed before. This 'price effect' is slightly higher in the main foreign tourist commodity (hotel and restaurant) than in the other services.

The next two simulations combine the 'foreign tourism boom' case with the globalisation scenario. The increase in the foreign tourist demand seems to amplify the positive effects of globalisation and at the same time reduce its adverse effects, as the government account is now in much better position. The increase in the government income from 'the boom' reduces the government burdens by providing additional incomes. In the context of the need to really embark on the globalisation, this will certainly give more room to *manoeuvre* for the government. The obvious

[41] The government of some western countries, including USA and UK, has given formal warning to their citizen NOT to visit certain parts of Indonesia in response to the crisis. The number of foreign visitors from Australia could also be affected in response to the East Timor independent process.

globalisation policy that the government can undertake is, therefore, to relax (i.e. reduce) its reliance on import tariff and indirect taxation at the 'revenue lost' rate of equal to the growth 'income increase' due to the growth of foreign tourist arrivals. [43] This will guarantee that the government current benchmark budget is maintained to finance its expenditure.[44]

C. Sensitivity Analysis

Table IV.2 columns (7)–(11) summary results of the sensitivity analysis, which is conducted by doubling the export demand elasticity values used in the five simulations. The doubling will make demand from the ROW more elastic, so that domestic market price will be more determined by export market (Recall that in the case of setting the elasticity value as infinity, this will make production, domestic demand and import share be determined by export price, and export quantity becomes a residual, namely production minus domestic component of domestic demand). The results suggest that the assigned elasticity values are crucial in determining the overall results, including the magnitude and -in some cases- the direction of the changes. For any policy changes introduced in the models, higher export demand elasticity will produce bigger impacts on the real/quantity variables and lower impacts on the prices. This is understandable given a higher elasticity value reflects a flatter export demand slope that makes any changes in the export price will be followed by bigger effect in the export quantity (clearly shown in the case of globalisation). On the other hand, the increase in foreign tourism demand (i.e. quantity changes) will result in lower price effects for the domestic economy as confirm by results of third simulation. These two counteracting effects take a force in the last two simulations. In general, the sensitivity analysis shows the robustness of the result and functional specifications employed in the models, as the results confirm to the theoretical prediction.

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[42] This increase can be achieved by an increase of foreign tourist arrivals by less than 10 %, as over the years their spending level tends to increase.

[43] Without necessarily disrupt the government 'planned' consumption and other expenditure, as the total government income is successfully maintained. This is very important issue for the 'lack of credibility' government such as the current government. Neglecting this fact, the issue is also important for the (current) government is expected to maintained (if not possible to increase) its economic role in the situation of prolonged economic crisis, characterised by economic contractions.

[44] It is, however, still questionable whether the 'presumably safe globalisation rate' is already in line with the government commitment to liberalise its foreign trade discussed before. To answer this question, a much detailed and improved CGE model is required, together with more elaborate government commitments and globalisation plans.

D. Conclusions

This study has shown that globalisation and tourism is not necessarily *a deadly mix* for domestic economy.[45] They can, in fact, reduce domestic price level, increase the amount of foreign trade and availability of products in the domestic economy and stimulate more production activities. All end up in improved macroeconomic performance and welfare, as domestic absorption, household income and consumption increase. In addition income distribution of agriculture households (i.e. 49.9% of total household) also improves. Foreign tourists can also be better off for they can consume more given their spending level.[46] The trade balance and government deficit, however, worsen, as imports increase more than exports and the government lost revenue is not compensated. The government can recover its lost revenue by introducing a more progressive and better direct tax administration to increase the tax collection rate.[47]

Given the potential benefits of both partial and full scale globalisation as shown here, it would be better for the government to start reducing its reliance on revenue from import tariff and indirect taxation, instead to embark on more free international trade. The globalisation could be initiated by removal of distortions in the domestic market which can then be followed by full-scale globalisation, including import tariff reductions. By having a less distorted domestic market, the benefits from having global markets can be more fully realised. It seems that globalisation, as measured here, is also 'foreign tourist'-friendly as they enjoy the lower prices and more availability of products.

The combined simulations of 'foreign tourism boom' and globalisation scenario result in the much better positive effects and a less worse adverse effects, as the 'boom' seems to amplify the positive effects of globalisation and at the same time to reduce its adverse effects. Trade balance and government accounts are also in much better position. The latter will certainly reduce the government burdens from embarking on the globalisation. It becomes possible for the government now to reduce its reliance on import tariff and indirect taxation, while at the same time maintaining its income level necessary to finance its expenditure. Whether this

[45] For a sample of this view, see for instance Globalisation and Tourism: Deadly Mix for Indigenous Peoples, Third World Network (http://www.twnside.org.sg).
[46] The CGE analysis above is, however, based purely on the variable chosen -given the existing data/model, neglecting externality issues and adverse effects of foreign tourism could have on the environment, culture etc.
[47] Tax collection in Indonesia is still poorly administered.

‘revenue neutral’ globalisation is already in line with the government commitments towards more open economy is, however, beyond the scope of this study.

Notice that there is no direct mapping of foreign tourist consumption with the working of domestic activities, which produce the commodities consumed by the foreign tourist and consume factors and intermediate inputs, including their income allocation. Further refinement of the model is therefore desirable to really reflect the actual and economy-wide role of foreign tourism in the economy. In short, this can be done by developing TSA for the existing economy in the benchmark year and then incorporating the results in the modification of the SAM, which can then be used as the framework of a complete tourism-CGE model. In this type of model, there will be direct mapping of foreign tourist consumption with domestic economy activity, including the use of factors and intermediate inputs in producing the goods and services consumed by the foreign tourists. This in turn can be followed by further elaboration of factor income allocation from labour and capital used in producing foreign tourist products to the appropriate institutions. By doing this, the full extent of foreign tourism role in the Indonesian economy can be fully reflected in the CGE model such that a comparison based on variable concerned above can be made between sectors involved and not involved in the foreign tourism activity. The same principle can then be applied in incorporating domestic tourism in the model.

Table IV.1: Description of Indicators Used in the Analysis

Variables Concerned	Descriptions and Measurements
A. Macroeconomic Aggregates (commonly used to measure economic performance)	
1.GDP	Total value added measured at constant (benchmark) price. Alternatively, GDP at factor cost = GDP at market price – Net Indirect Taxes
2.Employment	Total all categories of workers in the economy
3.Inflation(GDP Deflator)	Ratio of GDP at current price to GDP at constant price. This reflects the price change faced by production sector.
4.Consumer Price Index(CPI)	
a. Household	Weighted average of price changes faced by households
b. Government	Weighted average of price changes faced by government
c. Total	Weighted average of price changes faced by households & government
B. External Condition	
1. Foreign Trade	
a. Real Export	Export at constant price
b. Real Import	Import at constant price
c. Trade Balance	Export-Import at constant price
d. Terms of Trade	Difference between changes in the export price to that of import.
2. BOP Deficit	
a. Government	Current account deficits of the government account
b. Firm	Current account deficits of the domestic firm account
c. Total	Total current account deficits of the government and firm accounts
C. Welfare and Distribution	
1.Domestic Absorption	Total domestic final use, including household and government consumption as well as for investment
2.Households	
a. Total Income	Total household factor and other incomes
1).Agric. Households	Total incomes of Agriculture Households
2).Rural Households	Total incomes of Rural Households
3).Urban Households	Total incomes of Urban Households
b. Income Share (percent to total household income)	
1).Agric. Households	Ratio of total agriculture household income to total household income
2).Rural Households	Ratio of total rural household income to total household income
3).Urban Households	Ratio of total urban household income to total household income
c. Real Consumption	Total household consumption at constant price
d. Income Distribution (ratio of high income to low income groups)	
1).Agric. Households	Income ratio of high-income to low-income group of agriculture households
2).Rural Households	Income ratio of high-income to low-income group of non-agriculture rural households
3).Urban Households	Income ratio of high-income to low-income group of non-agriculture urban households

Table IV.2: Globalisation and Foreign Tourist Boom in the Indonesian Economy

Variables Concerned	Effects of Globalisation and its Combination with Foreign Tourist Boom in the Indonesian Economy (Percentage change from the benchmark)					Sensitivity Analysis (by doubling the values of export demand elasticities) of Globalisation and its Combination with Foreign Tourist Boom (Percentage change from the benchmark)				
	PG	FG	DI	PG & DI	FG & DI	PG	FG	DI	PG & DI	FG & DI
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A. Macroeconomic Aggregates										
1.GDP	0.016	0.478	0.087	0.104	0.562	0.048	0.492	0.064	0.111	0.552
2.Employment	0.033	0.983	0.179	0.214	1.156	0.098	1.012	0.132	0.229	1.136
3.Inflation (GDP Deflator)	0.014	1.123	0.268	0.285	1.381	0.102	1.000	0.168	0.269	1.160
4.Consumer Price Index (CPI)										
a. Household	-0.244	-0.257	0.204	-0.039	-0.062	-0.177	-0.343	0.128	-0.050	-0.22
b. Government	-0.166	0.238	0.163	-0.002	0.394	-0.110	0.199	0.108	-0.004	0.301
c. Total	-0.235	-0.200	0.199	-0.035	-0.010	-0.169	-0.281	0.126	-0.045	-0.163
B. External Condition										
1. Foreign Trade										
a. Real Export	0.571	-0.701	0.348	0.922	-0.368	0.760	-0.720	0.209	0.967	-0.524
b. Real Import	0.958	1.844	0.256	1.219	2.095	1.114	1.790	0.144	1.258	1.929
c. Trade Balance	-3.854	-29.777	1.399	-2.480	-28.501	-3.280	-29.406	0.955	-2.361	-28.552
d. Terms of Trade	-220.04	202.721	209.812	-7.191	402.457	-153.137	82.941	128.016	-24.752	202.627
2. BOP Deficit										
a. Government	379.632	1188.218	-5.548	374.671	1185.968	377.241	1194.569	-1.242	376.299	1195.213
b. Firm	-15.288	-35.856	-2.290	-17.614	-38.117	-16.115	-36.069	-1.660	-17.767	-37.665
c. Total	1.190	15.221	-2.426	-1.2456	12.960	0.298	15.281	-1.643	-1.326	13.779
C. Welfare and Distribution										
1.Domestic Absorption	0.138	1.1170	0.047	0.186	1.162	0.174	1.148	0.028	0.202	1.175
2.Households										
a. Total Income	0.001	1.539	0.333	0.338	1.862	0.116	1.484	0.226	0.340	1.698
1).Agriculture Households	0.001	1.419	0.318	0.321	1.727	0.109	1.337	0.210	0.317	1.537
2).Rural Households	-0.010	1.569	0.335	0.328	1.893	***0.107***	1.535	0.231	0.336	1.754
3).Urban Households	0.009	1.616	0.344	0.356	1.949	0.128	1.567	0.234	0.360	1.789
b. Income Share (% to total household income)										
1).Agriculture Households	-0.001	-0.039	-0.005	-0.005	-0.043	-0.002	-0.047	-0.005	-0.007	-0.051
2).Rural Households	-0.003	0.008	0.001	-0.002	0.008	-0.002	0.013	0.001	-0.001	0.014
3).Urban Households	0.003	0.031	0.004	0.008	0.035	0.005	0.034	0.004	0.008	0.037
c. Income Distribution (ratio of high income to low income groups)										
1).Agriculture Households	0.023	-0.032	-0.027	-0.004	-0.058	0.016	*0.003*	-0.013	*0.003*	-0.009
2).Rural Households	-0.021	0.180	0.003	-0.019	0.181	-0.014	0.298	0.023	*0.009*	0.317
3).Urban Households	0.211	0.729	0.003	0.212	0.727	0.224	0.953	0.042	0.264	0.986
d. Real Consumption	0.244	1.789	0.129	0.374	1.913	0.291	1.816	0.096	0.386	1.907
e. Foreign Tourist Consumption										
1).Hotel and Restaurant	0.080	1.460	9.294	9.493	8.599	*-0.049*	*-0.110*	9.126	9.031	12.161
2).All Services	0.062	-0.243	9.298	9.466	10.457	*-0.005*	*3.328*	9.131	9.084	8.423

Notes: PG & FG are Partial and Full Scale Globalisation, while DI is Foreign Tourist Demand Increase. Number in *Italic* shows the sign is different with the previous simulations

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