Liberalizing the Philippine Mining Industry: A CGE Approach Into Analyzing its Sectoral Impacts on the Economy

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The mining industry in the Philippines was once a promising venture that could contribute to the growth of output in the economy. Numerous legislations in support of mining in the Philippines that were passed through the years have proven ineffective in spurring development in the industry. Despite the spotted history of mining in the Philippines, the rising prices of precious metals in the world would seem that mining as a venue for output is as lustrous as ever. Due to the economic downturn in the mid 2000s, the markets turned their attention back to heavy investments in metals, causing most of them to hit their all-time highs. Unfortunately, mining in the Philippines is a noted underperformer during the periods of growth, which can be attributed to the fact that it is a young industry but with many concerns tied to it as well. Most of the concerns lie within the protection of the environment. The ISO guidelines to mining led many countries into levying taxes that would attribute to pollution and the Philippines is no exception. By using the 1994 input-output table for the Philippines and the Computable General Equilibrium model developed by Cororaton (2003), this study finds that the Mining Act of 1995 has negative welfare implications on households and different sectors. The government should reconsider some parts of the Mining Act of 1995, specifically the liberalization of investing in the industry; more particularly, allowing foreign-owned corporations to claim mineral rights in the country. Financial institutions may design instruments that will cater to the specific needs of the potential domestic investors. Mining firms, together with the government, should implement programs for the communities near areas with mineral exploration activities and other corporate social responsibility programs to spur economic development that is the ultimate goal of our country.

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The Philippines is a country comprised of a group of islands that is inherently abundant with natural resources. From seas bursting with various species of fishes and corals to forests filled with tall, strong trees for lumber to mountains packed with minerals waiting to be harvested. This gives potential to the development success of the different industries in the Philippine economy. One of these industries is the mining industry.

The Philippine mining industry has a complex geological history and diversity of minerals. The country is known to have several locations in which it is abundant in base and precious metals. In the early 1900s, the Masinloc reserves were known to have the largest deposits of Chromium in the world. Also, Surigao was said to have the largest ore bodies in the world. These gave potential for the country to supply commercial amounts of these metals. Though deposits of chromium were high, metals that were mined in commercial quantities were iron and copper. Currently, the country is a major producer of gold and copper and second in the Asia Pacific in geological prospectivity (Rovillos, Ramo & Corpuz, 2005) and according to thekDepartment of Environment and Natural Resources BDENR] (2813), Philippine mineral resources is the fifth largest in the world.

The mining industry is the backward industry that supplies raw materials for several other industries like jewelry and steel manufacturing. Mineral ores, specifically metals, are used to fabricate steel that is used to build infrastructure, machinery, and weapons. This was important at the height of the industrialization period. With the rise in innovations, there was a need to supply a large amount of mineral ores to suffice the demands of the growing and developing economies.

The rise of innovations in the industrialization era came the creation of different weapons that aided countries in their quests to expand territories and increase their resources. In 1937, war came to Asia that implied the need for machinery that demanded the supply of mineral ores. Though

demand increased, this has not affected the strategic importance of Philippine minerals rather the outbreak of war in Europe was what made countries mineral conscious (Porter, 1939). During these times, the country was still under the American regime as the Philippine Commonwealth. This made the Philippines a potential supplier of minerals to America that was actively engaging themselves in wars. According to Porter (1939), survey of Philippine mineral wealth showed the country as having deposits of gold, iron, chromite, manganese, copper, asbestos, molybdenum, lead, platinum, zinc, coal, petroleum, asphalt, gypsum, salt, sulfur, and clay. Base metals such as gold, iron, chromite, manganese and copper were found to have low to no local demand thus, the mining industry depended on the demands of the foreign market.

For Philippine minerals to compete in the foreign market, they must be rare, of unusually high grade or attractively priced. These features were not existent for the Philippine mining industry that made it difficult for the infant industry to develop. Deposits of minerals in the country were not rare. A large amount of minerals found in the country could also be found in other countries. Countries in Europe or America at war would more likely buy minerals from supplying countries that were closer to their country to lower transportation costs. Philippine mineral ores were also of low grade which required that ores be processed for it to be used as raw materials for sturdy weapons which served as a disincentive to procuring these. In addition, base metals like chromium and manganese that were of high value to the United States posed disincentives like the lack of reliable estimates of deposits and high freight rates.

However, with the entry of war in Asia, Japan was the main consumer of Philippine base metals. The Philippines is a strategic location in which Japan can lower its transportation costs considering that both countries lie in the same continent. Base-metal mining was established in the Philippines due to Japanese investment.

Yet, despite having exports of minerals to different countries but mostly in Japan, the mining industry in the Philippines was not developed enough to compete in the world market with less than 1% in world production.

In 1985, the mining industry fell into a crisis. There was a sudden drop in production due to mines closing down because of financial crisis. Only 16 out of 39 mines remained. According to Rovillos et al. (2005), the closing of mines was due to the absence of a new mining code, excessive taxes on gross receipts of mining companies and the output of low grade ores. This did not provide a good investment climate for mining in the Philippines that further lowered the opportunities for achieving output from the mining industry.

This resulted to numerous legislations in support of mining in the Philippines to spur development in the industry. However, many of these legislations were proven to be ineffective. According to Cruz et al. (2005), even though there exists a large number of attractive mineral prospects, the industry remains an under performer during the periods of growth due to a wide range of factors like the lack of domestic capital, strong opposition of mining due to environmental impacts, and policy inconsistencies and instabilities that concerns land-use conflicts and foreign ownership that is highly brought about by the Philippine Mining Act of 1995.

The Mining Act of 1995 or Republic Act (RA) 7942 was instated under the governance of President Fidel Ramos on March 6, 1995. The legislation aims to manage the country's resources, ownership, and administration, as well as control and supervise their exploration, development, and utilization. It also gives foreign investors the right to have full ownership regarding their investments in the mining industry instead of the 60-40 Filipino-foreign ownership ratio instated on other industries.

The creation of this law gives incentives to investing in the country's mining industry which lessens the enigma of the relative unwillingness of multinational mining companies and other developed world institutions to invest in third world countries. According to Groten and van Rensburg (1983), though third world countries like the Philippines are rich in mineral wealth and unskilled labor, they lack the capital and technology to promote optimal growth in their mining industries. Foreign investors are unwilling to invest in these countries because of political instabilities and lack of physical and social infrastructure like power grids, rail tracks, and water sources.

The Mining Act of 1995 was made in response to the World Bank and ADB's agenda for trade liberalization. In line with this, the International Monetary Fund (IMF) has seen that the Philippines has relatively restrictive laws and regulations on foreign investments and called for foreign reforms. This call led to the Economic Integration Program in 1992, which called for the government to exert efforts to attract foreign investors. This demanded reducing risk and uncertainty to investors. This required easy access to exploration permits and mining concessions and protection from unwanted government interference. The ADB endorses this since the entry of foreign companies will infuse new capital investments and technology.   As mentioned earlier, this enacted law allowed the government to enter into three types of deals with interested investors. First would be the right of the government institution in charge to give an exploration permit to qualified individuals and/ or corporations. Second is the capability that the government may enter into mineral agreements with the interested mining investors. Third is the entering of a Financial or Technical Assistance Agreement (FTAA), which is basically an agreement wherein large-scale exploration and mineral extraction can take place (Ciencia, 2006).

This mining act through its various machinations has actually been dubbed as the most foreign investor friendly mining act ever proposed. Within one month of its enactment the president of the Philippines at that time entered into a FTAA agreement with a mining corporation and this evidently declared open season in the Philippine mining industry (Ciencia, 2006).

Though this may attract foreign investors to invest in the local mining industry, this has caused problems to arise in society, namely, the loss of forest materials due to the establishment of mining communities; loss of marine sources of food due to pollution caused by mining activities; and coughs, colds, and other respiratory illnesses caused by air born dust particles as a by-product of mining activities. This led to concerns regarding the protection of the environment. In response to this, the formulation of the ISO guidelines led countries into levying taxes that would attribute to pollution in which the by-products for mining activities was not an exception.

These disadvantages were further discussed by Gómez-Márquez, Alejano, and Bastante (2011) on their study on mining compatibilities in Spain. According to them, mining activities may have negative impacts on other activities conducted in the society. One disadvantage was in line with mineral extraction and earth movement. The construction of mines to extract minerals required the movement of earth to construct tracks and roads that permanently change the structure of landmass that may affect the directionality of wind thus affecting farming activities. Another disadvantage results from blasting vibrations and blasting projections that can affect nearby infrastructures and hurt people and animals. Dust created by mining activities also gives a negative impact to the surrounding communities since it is suspended in the air before it is deposited to the surroundings. This may cause health issues to residents of nearby communities and stunt plant growth that may lower production in the farming sector.

Moreover, this caused a rise in social conflicts within the society specifically to indigenous peoples and upland communities. Studies show that there was a lack of appropriate consultation and participation of indigenous communities, manipulative tactics, militarization, force relocation, and displacement of indigenous peoples, land ownership and access struggles, and lack of adequate protection for indigenous peoples (Caruso, Colchester, Mackay, Hildyard, & Nettleton, 2005). This led to a rise of threats to biodiversity and sustainable development of territories (Rovillos et al., 2005).

A positive outcome from mining activities is that it generates output and income for the community. Mines harvest minerals, base, and precious metals that can be processed or used as they are as raw materials to manufacture other goods which generates income for the community. It also creates and expands economic opportunity for the society since it provides jobs for citizens directly and indirectly (Bugnosen, 2001).

In line with this, we could see that the mining industry has high potential to impact other sectors of the economy. In order to forecast the effect of certain shocks like the instatement of the Mining Act of 1995 to the mining industry on relevant sectors in the Philippines, we will employ different methods including the Computable General Equilibrium (CGE) model. The CGE model could be used to assess the impact of policies on the economy. This model is said to be the leading tool in the multi-sector, economy-wide modeling for policy analysis. It solves for the optimal choices of consumers and producers as affected by the implementation of policies. In a study conducted by Xie and Saltzman (2000), they used the CGE model to assess the effectiveness of Chinese environmental policies on pollution control and impacts on the economy. Similarly, our study will assess the impact of the instatement of the Mining Act of 1995 to the various industries in the economy.

The assessment of these impacts would help draw out policy implications for sustainable development that will spur potential sources of growth or combat vulnerabilities. With this, sustainable development in the mining sector would require a combination of suitable mineral and environmental policies, legislation, administration, enforcement, and organization (Intarapravich & Clark, 1994) in which, with the CGE model, can be improved and attained.

THEORETICAL FRAMEWORK
AND METHODOLOGY

According to Dakila, Mizokami, and Kim (2003), the assumption of CGE is the analysis of changes in transport prices of the goods and it will be the differences of relative intensities between products. These changes in transport prices will then in effect reflect a change in the consumer demand of the goods being studied and will therefore affect the utility and demand functions incorporated in the CGE model.

The CGE model to be utilized in this study is based on the Cororaton (2003) paper wherein he used the CGE model for the Philippines to analyze the impact of tariff reforms on the Philippine economy. In this light, we would be capitalizing on Cororaton's CGE model of the Philippines, PCGEM, with some adjustments for the model to fit the study in looking at the effect of policies concerning the mining industry.

The original model had 12 production sectors while the PCGEM to be used in this study will only be using eight sectors. The agriculture sector will be one sector which represents agriculture, forestry, and fishery. The elasticity of which will be the weighted average of the four sub-sectors that were originally set under agriculture. The industry sector will be disaggregated into five sub-sectors to highlight the mining industry. Lastly, services will include two sectors namely, private services and government services. Government services is a different sector since they are classified as non-tradable goods. Modifications are made on the CES production functions to be used as well. Despite using the two production factors, labor and capital, the model will not undergo any change regarding its theory but rather on its application. The socio-economic classes will be reduced to two instead of the six originally used by the Cororaton (2003) PCGEM, which accounts for employees in an urban setting, self-employed in an urban setting, employees in a rural setting, and self-employed in a rural setting. Furthermore, we aggregated the factors of production, labor, and capital.

The assumptions of the Cororaton (2003) PCGEM kept by the proponent are as follows: the sectoral capital is held fixed; value added and sectoral intermediate output determine total output per sector through fixed coefficients; and prices clear both the factor and product market. Furthermore, Walras' law is also satisfied through and will be based on Cobb-Douglas utility functions.

The linear programming functions of the PCGEM will be done through the use of the General Algebraic Modeling System (GAMS). It is the usual software of choice for analyzing SAMs due to its capability to handle large complex problems albeit with a limited number of constraints. In this case, the version being used has a 300 constraint limit.

This study aims to measure the impact of the surge in capital inflows in the mining industry after the implementation of the Mining Act of 1995. Though we use the 1994 Philippine Social Accounting Matrix, we can still gather useful information from the simulation since there is a long process for mining firms to realize their investments. The actual lead time for the government to approve mining claims before firms could perform mineral explorations actually take around 10 years. Also, the mining industry was a relatively small industry during the enactment of the policy. At that time, the relative share of the mining industry is around two percent of the entire economy. However, there is a huge market for mining once foreign investments come in. Hence, we estimated that this policy will lead to a 10% increase in the total amount of capital circulating in the economy.

RESULTS AND DISCUSSION

The introduction of the mining act will lead to an influx of capital, making it relatively more abundant than before. This will decrease in productivity of the factor inputs, which leads to a decrease in price of labor and capital. Since the households in our economy are assumed to own

factor inputs, each household owns some amount of labor and some amount of capital. With the decline of factor prices, household income will also decline. With lower income, households will reallocate their consumption such that its demand for good will also decrease, which drove down consumer price of goods in general, while price of imports remained unchanged. It is notable that the price of imported goods are relatively lower than the price of local commodities. This will later take its toll on the domestic economy as households later on become more dependent on imported commodities.

It is interesting to find that for the urban households, consumption of agricultural products, construction, and utilities declined while for rural households, consumption for these sectors increased. This may be attributed to the concentration of mineral activities in the rural areas. Aside from consumption, receipts from direct taxation also declined, which is also the same case as indirect tax receipts except for utilities sector that may have been due to the increased consumption in the construction sector.

While savings of all households were also affected negatively, it can be noted that firm savings and government saving improved by two percent and three percent respectively. We can infer that the increase in capital inflow had a positive impact on the government.

On the production side, there was an improvement in output levels across sectors with the exception of food manufacturing and non-food manufacturing sectors. This may be attributable to the shift in concentration of factor inputs as well as the volume of local output sold in the domestic market. Since imports are relatively cheaper, producers will not make the rest of the world as its main market.

POLICY RECOMMENDATIONS

Given the discussion on the previous section, there are negative welfare implications on the households in particular. The government should reconsider some parts of the Mining Act of 1995, specifically the liberalization of investing in the industry more particularly, allowing foreign-owned corporations to claim mineral rights in the country. Our simulation result showed that despite the capital inflow into the country, household income as well as consumption declined. This means that the benefit from mining activities are enjoyed by foreign countries. Furthermore, it seems that the additional investment is crowding out the growth opportunities of the economy.

In line with this, government should not merely bank on foreign investments. It should also create opportunities that will encourage domestic owners of capital to invest in the mining sector. Financial institutions may design instruments that will cater to the specific needs of the potential investors. This way, profits from these investments will remain in the economy.

Aside from this, government and firms seem to be the only ones who have improved their savings position as an effect of the policy. The improvement of their welfare should be converted to productive savings through programs for the communities near areas with mineral exploration activities and other corporate social responsibility programs to spur economic development that is the ultimate goal of our country.

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APPENDIX

Results of the Benchmark Model and Policy Simulation

Definitions	Symbol	Benchmark	Simulation
			KD inc 10%
wage rate	W	1.00	0.14
			(0.86)
GDP Deflator	PINDEX	1.22	1.22
			0.00
Exchange Rate (numeraire)	e	1.00	1.00
			0.00
Rate of Return to Capital			
Agriculture	Ragr	3.65	3.17
			(0.13)
Mining	Rmin	0.20	0.19
			(0.02)
Food Manufacturing	Rfmg	0.07	0.06
			(0.05)
Non-food Manufacturing	Rnfm	0.05	0.05
			(0.06)
Construction	Rcon	0.74	0.60
			(0.19)
Utilities	Rutl	4.08	3.71
			(0.09)
Services	Rsrv	0.03	0.02
			(0.10)
Value Added Price			
Agriculture	PVAagr	1.89	1.60
			(0.15)
Mining	PVAmin	0.18	0.17
			(0.02)
Food Manufacturing	PVAfmg	0.04	0.04
			0.08
Non-food Manufacturing	PVAnfm	-0.20	(0.20)
			0.02
Construction	PVAcon	0.49	0.37
			(0.24)
Utilities	PVAutl	3.09	2.94
			(0.05)
Services	PVAsrv	0.01	0.01
			0.28
Government Services	PVAgov	0.16	0.14
			(0.09)

Producer Price			
Agriculture	Pagr	1.10	0.98
			(0.10)
Mining	Pmin	1.63	1.64
			0.01
Food Manufacturing	Pfmg	1.50	1.47
			(0.02)
Non-food Manufacturing	Pnfm	1.55	1.55
			0.00
Construction	Pcon	0.95	0.89
			(0.06)
Utilities	Putl	2.50	2.43
			(0.03)
Services	Psrv	0.69	0.68
			(0.02)
Government Services	Pgov	0.63	0.63
			(0.00)
Price of Composite Commodity			
Agriculture	PCagr	2.37	2.34
			(0.01)
Mining	Pcmin	1.17	1.16
			(0.00)
Food Manufacturing	PCfmg	1.75	1.71
			(0.02)
Non-food Manufacturing	PCnfm	1.59	1.59
			0.00
Construction	PCcon	2.23	2.21
			(0.01)
Utilities	PCutl	4.65	4.74
			0.02
Services	PCsrv	1.43	1.46
			0.02
Consumer Price			
Agriculture	PDagr	2.39	2.36
			(0.01)
Mining	PDmin	1.43	1.43
			(0.00)
Food Manufacturing	PDfmg	1.80	1.75
			(0.02)
Non-food Manufacturing	PDnfm	2.00	2.00
			0.00
Construction	PDcon	2.26	2.24
			(0.01)

Utilities	PDutl	4.65	4.74
			0.02
Services	PDsrv	1.45	1.48
			0.02
Producer Price of Commodity Sold Domestically			
Agriculture	PLagr	2.34	2.31
			(0.01)
Mining	PLmin	1.39	1.39
			(0.00)
Food Manufacturing	PLfmg	1.70	1.66
			(0.02)
Non-food Manufacturing	PLnfm	1.81	1.81
			0.00
Construction	PLcon	2.22	2.20
			(0.01)
Utilities	PLutl	4.55	4.63
			0.02
Services	PLsrv	1.39	1.42
			0.02
Price of Imports			
Agriculture	PMagr	1.02	1.02
			0.00
Mining	PMmin	1.03	1.03
			0.00
Food Manufacturing	PMfmg	1.06	1.06
			0.00
Non-food Manufacturing	PMnfm	1.11	1.11
			0.00
Construction	PMcon	1.02	1.02
			0.00
Utilities	PMutl	1.02	1.02
			0.00
Services	PMsrv	1.04	1.04
			0.00
Producer Price of Exported Commodity			
Agriculture	PEagr	1.00	1.00
Mining	PEmin	1.00	1.00
Food Manufacturing	PEfmg	1.00	1.00

Non-food Manufacturing	PEnfm	1.00	1.00
Construction	PEcon	1.00	1.00
Utilities	PEutl	1.00	1.00
Services	PEsrv	1.00	1.00
Government Services	PEgov	1.00	1.00
Production and Factors			
Output			
Agriculture	XSagr	531,090,000.00	566,480,000.00
			0.07
Mining	Xsmin	4,157,000.00	4,376,000.00
			0.05
Food Manufacturing	XSfmg	85,527,000.00	78,899,000.00
			(0.08)
Non-food Manufacturing	XSnfm	126,550,000.00	124,320,000.00
			(0.02)
Construction	Xscon	218,100,000.00	224,600,000.00
			0.03
Utilities	Xsutl	176,760,000.00	190,260,000.00
			0.08
Services	XSsrv	630,930,000.00	671,120,000.00
			0.06
Government Services	Xsgov	251,110,000.00	251,640,000.00
			0.00
Value Added			
Agriculture	VAagr	212,310,000.00	226,450,000.00
			0.07
Mining	VAmin	4,013,000.00	4,224,000.00
			0.05
Food Manufacturing	VAfmg	29,145,000.00	26,887,000.00
			(0.08)
Non-food Manufacturing	VAnfm	57,440,000.00	56,424,000.00
			(0.02)
Construction	VAcon	116,120,000.00	119,580,000.00
			0.03
Utilities	VAutl	94,779,000.00	102,020,000.00
			0.08
Services	VAsrv	472,420,000.00	502,510,000.00
			0.06

Government Services	VAgov	173,310,000.00	173,680,000.00
			0.00
Labour			
Agriculture	LDagr	172,380,000.00	169,060,000.00
			(0.02)
Mining	LDmin	3,306,600.00	3,154,900.00
			(0.05)
Food Manufacturing	LDfmg	26,840,000.00	29,190,000.00
			0.09
Non-food Manufacturing	LDnfm	126,490,000.00	129,470,000.00
			0.02
Construction	LDcon	64,327,000.00	61,666,000.00
			(0.04)
Utilities	LDutl	58,997,000.00	59,263,000.00
			0.00
Services	LDsrv	98,641,000.00	103,510,000.00
			0.05
Government Services	LDgov	173,310,000.00	173,680,000.00
			0.00
Capital			
Agriculture	KDagr	62366370.11	107,009,236.59
			0.72
Mining	KDmin	13246423.47	72,264,400.54
			4.46
Food Manufacturing	KDfmg	379233829.2	674,960,410.48
			0.78
Non-food Manufacturing	KDnfm	2832044353	650,083,050.11
			(0.77)
Construction	KDcon	10637035.04	58,557,033.11
			4.51
Utilities	KDutl	57321662.09	78,617,864.76
			0.37
Services	KDsrv	3673748627	3,478,072,480.91
			(0.05)
Total Intermediate Consumption			
Agriculture	CIagr	86,965,000.00	92,760,000.00
			0.07
Mining	CImin	3,074,000.00	3,236,000.00
			0.05
Food Manufacturing	CIfmg	63,254,000.00	58,352,000.00
			(0.08)

Non-food Manufacturing	CInfm	126,180,000.00	123,950,000.00
			(0.02)
Construction	CIcon	96,202,000.00	99,069,000.00
			0.03
Utilities	CIutl	77,504,000.00	83,424,000.00
			0.08
Services	CIsrv	269,940,000.00	287,140,000.00
			0.06
Government Services	CIgov	73,522,000.00	73,677,000.00
			0.00
Income and Savings			
Income			
urban employed	YHurbl	198,940,000.00	183,380,000.00
			(0.08)
urban self-employed	YHurbk	178,760,000.00	168,520,000.00
			(0.06)
rural employed	YHrurl	182,990,000.00	169,250,000.00
			(0.08)
rural self-employed	YHrurk	274,800,000.00	257,350,000.00
			(0.06)
firms	YF	24,577,000.00	22,562,000.00
			(0.08)
government	YG	185,910,000.00	183,200,000.00
			(0.01)
Disposable Income			
urban employees	YDHurbl	188,390,000.00	173,650,000.00
			(0.08)
urban self-employed	YDHurbk	167,920,000.00	158,300,000.00
			(0.06)
rural employees	YDHrurl	178,190,000.00	164,820,000.00
			(0.08)
rural self-employed	YDHrurk	266,220,000.00	249,320,000.00
			(0.06)
Savings			
urban employed	SHurbl	15,428,000.00	14,221,000.00
			(0.08)
urban self-employed	SHurbk	18,170,000.00	17,130,000.00
			(0.06)
rural employed	SHrurl	12,740,000.00	11,784,000.00
			(0.08)
rural self-employed	SHrurk	23,200,000.00	21,727,000.00
			(0.06)
firms	SF	79,550,000.00	81,250,000.00
			0.02

government	SG	(91,300,000.00)	(88,590,000.00)
			(0.03)
Receipts from direct taxation			
urban employed	DTHurbl	10,559,000.00	9,732,400.00
			(0.08)
urban self-employed	DTHurbk	10,845,000.00	10,224,000.00
			(0.06)
rural employed	DTHrurl	4,798,000.00	4,438,000.00
			(0.08)
rural self-employed	DTHrurk	8,578,600.00	8,033,900.00
			(0.06)
firms	DTF	3,766,500.00	3,457,700.00
			(0.08)
Receipts from Indirect Taxation			
Agriculture	TIagr	12,821,000.00	12,516,000.00
			(0.02)
Mining	TImin	774,780.00	767,900.00
			(0.01)
Food Manufacturing	TIfmg	19,012,000.00	17,932,000.00
			(0.06)
Non-food Manufacturing	TInfm	88,487,000.00	88,487,000.00
			0.00
Construction	TIcon	3,473,500.00	3,417,200.00
			(0.02)
Utilities	TIutl	6,767,300.00	6,929,900.00
			0.02
Services	TIsrv	16,024,000.00	17,263,000.00
			0.08
Demand			
urban employed			
Agriculture	Cagr,urbl	42,180,000.00	42,170,000.00
			(0.00)
Mining	Cmin,urbl	129,480.00	114,860.00
			(0.11)
Food Manufacturing	Cfmg,urbl	28,550,000.00	27,870,000.00
			(0.02)
Non-food Manufacturing	Cnfm,urbl	2,632,000.00	4,462,000.00
			0.70
Construction	Ccon,urbl	1,084,000.00	1,100,000.00
			0.01
Utilities	Cutl,urbl	16,130,000.00	16,720,000.00
			0.04
Services	Csrv,urbl	4,896,600.00	6,500,000.00
			0.33

urban self-employed			
Agriculture	Cagr,urbk	38,790,000.00	38,370,000.00
			(0.01)
Mining	Cmin,urbk	105,220.00	96,342.46
			(0.08)
Food Manufacturing	Cfmg,urbk	28,460,000.00	26,860,000.00
			(0.06)
Non-food Manufacturing	Cnfm,urbk	4,150,000.00	5,343,000.00
			0.29
Construction	Ccon,urbk	152,000.00	1,234,000.00
			7.12
Utilities	Cutl,urbk	16,500,000.00	17,050,000.00
			0.03
Services	Csrv,urbk	544,900.00	959,100.00
			0.76
rural employed			
Agriculture	Cagr,rurl	4,348,000.00	5,319,000.00
			0.22
Mining	Cmin,rurl	201,370.00	184,430.00
			(0.08)
Food Manufacturing	Cfmg,rurl	22,734,000.00	20,412,000.00
			(0.10)
Non-food Manufacturing	Cnfm,rurl	11,062,000.00	9,668,800.00
			(0.13)
Construction	Ccon,rurl	32,410.00	53,050.00
			0.64
Utilities	Cutl,rurl	3,455,000.00	3,690,000.00
			0.07
Services	Csrv,rurl	38,910,000.00	32,938,000.00
			(0.15)
rural self-employed			
Agriculture	Cagr,rurk	13,980,000.00	14,970,000.00
			0.07
Mining	Cmin,rurk	311,490.00	288,890.00
			(0.07)
Food Manufacturing	Cfmg,rurk	24,768,000.00	22,803,000.00
			(0.08)
Non-food Manufacturing	Cnfm,rurk	14,998,000.00	13,182,000.00
			(0.12)
Construction	Ccon,rurk	152,000.00	174,900.00
			0.15
Utilities	Cutl,rurk	8,086,000.00	8,531,000.00
			0.06

Services	Csrv,rurk	49,016,000.00	41,306,000.00
			(0.16)
Intermediate Demand			
Agriculture	DITagr	109,500,000.00	110,770,000.00
			0.01
Mining	DITmin	20,035,000.00	19,905,000.00
			(0.01)
Food Manufacturing	DITfmg	33,802,000.00	34,463,000.00
			0.02
Non-food Manufacturing	DITnfm	311,270,000.00	321,340,000.00
			0.03
Construction	DITcon	14,151,000.00	14,817,000.00
			0.05
Utilities	DITutl	43,898,000.00	45,712,000.00
			0.04
Services	DITsrv	380,620,000.00	380,620,000.00
			0.00
Investment Demand			
Agriculture	INVagr	783,300.00	746,900.00
			(0.05)
Mining	INVmin	638,600.00	624,500.00
			(0.02)
Food Manufacturing	INVfmg	319,900.00	328,200.00
			0.03
Non-food Manufacturing	INVnfm	114,930,000.00	111,090,000.00
			(0.03)
Construction	INVcon	4,875,000.00	5,589,000.00
			0.15
Utilities	INVutl	272,830.00	285,290.00
			0.05
Services	INVsrv	32,396,000.00	30,230,000.00
			(0.07)
Total Investment	IT	439,670,000.00	430,580,000.00
			(0.02)
Local Output Sold on Domestic Market			
Agriculture	Dagr	1.24	1.33
			0.07
Mining	Dmin	0.24	0.25
			0.05
Food Manufacturing	Dfmg	0.20	0.18
			(0.08)
Non-food Manufacturing	Dnfm	0.26	0.26
			(0.02)

Construction	Dcon	1.27	1.31
			0.03
Utilities	Dutl	2.04	2.20
			0.08
Services	Dsrv	0.70	0.75
			0.06
Composite Commodity			
Agriculture	Qagr	9,419,000.00	9,194,800.00
			(0.02)
Mining	Qmin	20,144,000.00	19,965,000.00
			(0.01)
Food Manufacturing	Qfmg	23,980,000.00	22,618,000.00
			(0.06)
Non-food Manufacturing	Qnfm	445,480,000.00	445,470,000.00
			(0.00)
Construction	Qcon	6,775,700.00	6,665,800.00
			(0.02)
Utilities	Qutl	2.04	2.20
			0.08
Services	Qsrv	24,263,000.00	26,140,000.00
			0.08
International Trade			
Imports			
Agriculture	Magr	9,419,000.00	9,194,800.00
			(0.02)
Mining	Mmin	20,144,000.00	19,965,000.00
			(0.01)
Food Manufacturing	Mfmg	23,980,000.00	22,618,000.00
			(0.06)
Non-food Manufacturing	Mnfm	445,480,000.00	445,470,000.00
			(0.00)
Construction	Mcon	6,775,700.00	6,665,800.00
			(0.02)
Utilities	Mutl	0.00	0.00
			0.00
Services	Msrv	24,263,000.00	26,140,000.00
			0.08