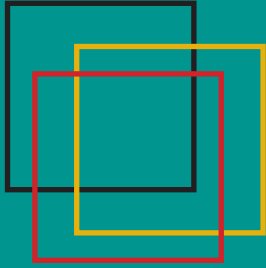




Coordinating Ministry for Economic Affairs
Republic of Indonesia



International
Labour
Organization



SAMASAMA: SOCIAL ACCOUNTING MATRIX ADVISORY
SUPPORT AND MONITORING ASSISTANCE

IN BRIEF Trade and employment

ASEAN–China Free Trade Area – Opportunity or Challenge?

Indonesia and China have a dynamic history in trading commodities and China is one of Indonesia's major trading partners. Indonesia trades mineral fuels and lubricants with China. Imports from China are predominant in machinery and electrical products, metals, chemicals and textiles.

The ASEAN–China Free Trade Area (ACFTA) is seen both as an opportunity and a challenge in Indonesia. There are concerns that increased import competition may damage industrial sectors, but there is also an acknowledgement that the ACFTA would open up new export opportunities for the agricultural sector. There is particular concern that the agreement would entail job losses in labour-intensive industries, and that these job losses

may not be offset by job gains in export sectors. However, to date most of the research on the impact of the ACFTA has focused on sectoral output, trade and welfare, rather than analyzing the impact that ACFTA may have on employment. As creation of productive jobs is a key policy issue for policy makers, it is important to understand how trade changes influence sectors of the economy and how this influences job creation and job loss.

The dynamic social accounting matrix, which was developed in partnership with the Government of Indonesia and the ILO, can be used in combination with a trade simulation model (the SMART model) to assess the impact of implementation of the ACFTA and determine what this means for the Indonesian labour market.

The findings from this methodology suggest that the total impact of ACFTA on employment is relatively small and slightly negative for Indonesia, which is consistent with previous studies. However, the most important thing is understanding the structural changes of the ACFTA so that proactive policy measures can be taken. The sectors of the economy vary considerably in their employment sensitivity to trade flows, which is a result of the individual sector's labour intensity and the differing backward and forward linkages that are associated with that sector.

For 2009 the SMART model estimates that exports from Indonesia to China would increase by USD \$916 million, and the imports by Indonesia would increase by USD \$1.29 billion. These changes are relatively small as many of the specifications of the ACFTA had already been implemented by 2009. In terms of the overall impact on the labour market in 2009, results estimate that the total number of full-time equivalent jobs lost is 297K and the total number of jobs created is 225K. This means that only 0.2 per cent of jobs in Indonesia would have been affected by the ACFTA in 2009.

Sectors that would be most affected by export gains include the mining sectors (coal, metal, petroleum), plantations, and manufacturing in paper and machines and chemicals. In terms of employment, the effect would be most concentrated in the plantations sector (palm oil, rubber, cocoa, coffee) and the trade services sector would benefit indirectly. Employment in the plantation sector tends to be in rural areas and employ more men.

Sectors that would be most affected by import losses include manufacturing in paper and machines, textile and garment. Employment losses would be concentrated in crops, manufacturing in textiles and garment, as well as in the trade services sector. The textile manufacturing and trade services sec-

ISSUE JUNE 2011

ASEAN–China Free Trade Area
– Opportunity or Challenge?

ASEAN–China Free Trade Area
– the findings to date

What is the ASEAN–China Free Trade
Area?

The methodology

Estimates of full-time equivalent em-
ployment created and lost in 2009
associated with ACFTA

tors tend to employ more females and more youth, and these jobs are usually based in urban areas.

Overall agriculture is one of the sectors that would benefit the most from ACFTA. However, this sector is currently dominated by subsistence farming and is rather labour-intensive, even though some activities (e.g. palmoil) are comparatively more productive and orientated towards exports.

It is possible that the increasing agricultural export market may support improvements in agricultural productivity, which is likely to have a positive impact on employment quality in the long term within the sector.

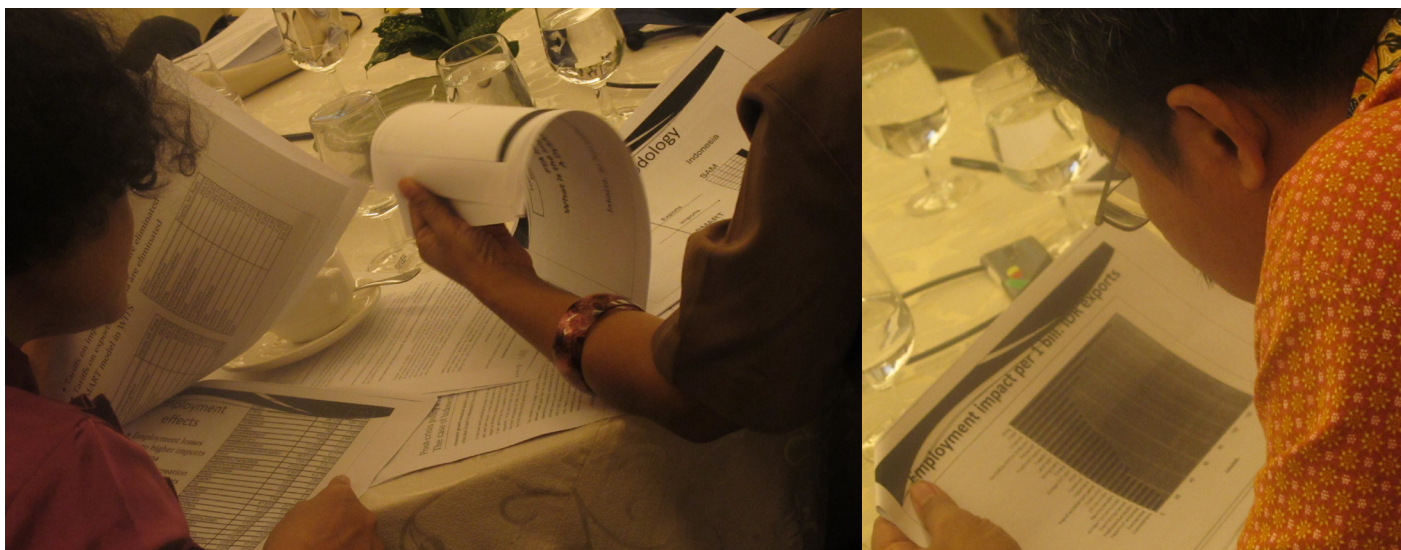
It is important to understand who will

be the losers and the winners of trade changes, as the transition between winning and losing sectors is not automatic, even less from an employment perspective. A female urban worker losing a job in the textile sector is unlikely to become a palm oil farmer in a rural area. Labour mobility depends on, among other things, geographic and skills mobility. A better understanding of the winning and losing workers will help identify appropriate labour market policies to mitigate social costs and to maximize potential benefits of the ACFTA.

Understanding the employment implications of trade provides space to formulate policies that would minimize adjustment costs. Importantly, the benefits that are expected from the

ACFTA may not be automatic. ACFTA, for example, entails increases in agricultural exports, but to take advantage of this the sector needs a labour force with the appropriate skills, as well as improved infrastructure, access to finance and a supportive regulatory environment.

The results of this study focus on the short run impacts of the ACFTA and do not capture the dynamic long term effects that could result from this agreement. More trade could encourage more investments that subsequently create more formal employment over time. This effect is under estimated in this research and could potentially outweigh the small negative employment impact calculated thus far.



ASEAN–China Free Trade Area - the findings to date

An Asian Development Bank study (Park et al. 2008) based on a sectoral general equilibrium model concluded that the ASEAN-China FTA will lead to moderate welfare gains for Indonesia by increasing its exports to China and enabling higher imports that increase productivity and efficiency in Indonesia. Total output in Indonesia is, however, predicted to fall slightly by -0.17 per cent, mainly due to decreasing output and exports of heavy manufacturing while output and exports in food products increase significantly. Another study by the OECD (Kiyota et al. 2008) using a general equilibrium model confirms the positive long-term impact on welfare (1.2 per cent of GDP) of such a free trade agreement for Indonesia through resource allocation towards sectors with comparative advantages. Tsigas and Wang (2010) apply a general equilibrium model with explicit modeling of export processing zones in China and predict an increase of Indonesian imports by 4.32 per cent and an increase of exports by 3.31 per cent, which leads to an increase in welfare by USD \$397 million. Vanzetti and Oktaviani (2011) combine a global and a country specific CGE model and show that in agriculture the employment effects of ACFTA are small.

Kiyota, K., Molnar, M. and Stern, R. (2008) "Storm in a Spaghetti Bowl: FTAs and the BRIICS", in OECD (eds.), *Globalisation and Emerging Economies: Brazil, Russia, India, Indonesia, China and South Africa*, OECD, Paris.

Park, D., Park, I., Estrada, G. (2008) *Prospects of an ASEAN–People's Republic of China Free Trade Area: A Qualitative and Quantitative Analysis*. ADB Economics Working Paper Series No. 130, ADB, Manila.

Tsigas, M. and Wang, Z. (2010) *A General Equilibrium Analysis of the China-ASEAN Free Trade Agreement*, GTAP 2010 Conference Paper.

Vanzetti, D. and Oktaviani, R. (2011) *Trade and employment linkages in Indonesian Agriculture*, Report prepared for International Labour Organization. Geneva, 18.04.2011.

WHAT IS THE ASEAN - CHINA FREE TRADE AREA?

The ASEAN–China Free Trade Area (ACFTA) is a free trade area among the ten member states of the Association of Southeast Asian Nations (ASEAN) and the People's Republic of China. The initial framework agreement was accepted in 2002, with the intent to establish a free trade area among the eleven nations by 2010. Liberalization in Indonesia started in 2005 and the free trade area came into effect on 1 January 2010.

In 2009, tariffs on Chinese imports to Indonesia were already low on average. More than 65 per cent of imports were duty free and the average tariff was 3.65 per cent. China's average tariff on ASEAN commodities is also low, with nearly 60 per cent of tariff lines in China duty free for Indonesian products and the average tariff relatively low at 2.6 per cent. A few sensitive products in both China and Indonesia are excluded from the agreement and goods are protected with relatively high tariffs that are equal to the “most favored nation” tariffs. Under the ACFTA, China, Brunei, Indonesia, Malaysia, Philippines, Singapore and Thailand removed almost all tariffs by January 1, 2010. The other four ASEAN members - Cambodia, Laos, Myanmar and Vietnam - are expected to revise tariffs on the majority of Chinese commodities by 2015.

The methodology

This research project sought to develop relatively simple and up-to-date quantitative methodologies that could be used to assess questions that are facing policy makers on a daily basis. This is important as more sophisticated models, such as general equilibrium models, are dependent on a number of behavioural assumptions and tend to be only fully understood by a limited number of people.

The research presented in this brief has used two techniques to analyze details of the employment implica-

tions of the ACFTA in Indonesia.

The first is the SMART model, which is a partial equilibrium trade simulation model. This model was used to assess the potential impact of the elimination of Indonesia's tariffs on imports from China and the impact of the elimination of tariffs on Indonesia's exports to China.

The second is the dynamic social accounting matrix which is used to analyse the impact of changes to imports and exports on the labour market in In-

donesia. The dynamic social accounting matrix allows an assessment over time of the impact that trade changes may have on employment within the economy, including information on direct and indirect effects associated with value chain linkages, as well as induced effects that are due to the higher incomes and consumption of workers from the export sectors.

The steps taken to estimate the employment effects of the China – Asean Free Trade Area on employment in Indonesia are outlined below.

Step 1: Calculate change of exports and imports for the ACFTA using SMART
SMART is a partial equilibrium trade simulation model.

Step 2: Link to DySAM - $\Delta Y = Ma * \Delta x_{ACFTA}$

Where ΔY is the change in total domestic production, Ma is the DySAM multiplier matrix and Δx_{ACFTA} is the change in exports or imports.

Step 3: Link with DySAM employment satellite - $\Delta Labour_{ACFTA} = \lambda * Ma * \Delta x_{ACFTA}$

Where $\Delta Labour_{ACFTA}$ is the change in employment and λ is the employment satellite of the DySAM.

Step 4: Employment Distribution = $\mu * \Delta Labour_{ACFTA}$

Where μ is the share of employment in rural and urban areas, male and female employment and youth employment share.

Step 5: EmploymentFullTimeEquivalentACFTA = $v * \Delta Labour_{ACFTA}$

Where v is the full-time equivalent matrix.



Estimates of full-time equivalent employment created and lost in 2009 from imports and exports associated with ACFTA

Economic Sector	Full time equivalent employment gains from export gains	Full time equivalent employment losses from imports losses
Crops	47,950	60,360
Plantation	38,614	7,588
Livestock	6,850	8,778
Forestry	1,136	745
Fishery	3,650	4,763
Coal, metal, petroleum	2,255	644
Mining and quarry	999	8,928
Food, beverage, tobacco	5,767	8,031
Textile, apparel, garment, leather	16,415	45,386
Wood	7,815	2,351
Paper, print, machinery, metal	7,350	22,943
Chemical, fertilizer, clay, cement	5,137	5,390
Electricity, gas, water	412	769
Construction	574	694
Trade services	27,716	45,402
Restaurant	17,563	24,297
Hotel	210	315
Land transport	6,708	10,309
Air and water transport, communication	4,552	6,708
Storage and other transport	1,619	2,598
Bank and insurance	1,497	2,079
Real estate and business services	2,079	3,304
Government, defense, education, health	7,069	9,382
Other personal services	11,072	15,377
Total	225,018	297,142

This issue of In Brief is based on a publication titled:

Ernst, C. and Peters, R (2011) Employment Dimension of Trade Liberalization with China: Analysis of the Case of Indonesia with Dynamic Social Accounting Matrix, United Nations Conference on Trade and Development and International Labour Office, Geneva.

For more information, please contact:

Emma Allen
ILO Country Office for Indonesia and Timor-Leste
Employment Intensive Investment Programme
Menara Thamrin, Level 22, Jl M. H. Thamrin Kav. 3,
Jakarta 10250, Indonesia
Email: allen@ilo.org

Christoph Ernst
International Labour Office
Employment Intensive Investment Programme
4, route des Morillons
121 Geneva 22, Switzerland
Email: ernst@ilo.org