ZEF Bonn
Zentrum für Entwicklungsforschung
Center for Development Research
Universität Bonn

INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE
IFPRI®
sustainable solutions for ending hunger and poverty

Hoa Nguyen, Ulrike Grote

Agricultural Policies in Vietnam: Producer Support Estimates, 1986-2002

Number
93

ZEF – Discussion Papers on Development Policy
Bonn, December 2004

The CENTER FOR DEVELOPMENT RESEARCH (ZEF) was established in 1995 as an international, interdisciplinary research institute at the University of Bonn. Research and teaching at ZEF aims to contribute to resolving political, economic and ecological development problems. ZEF closely cooperates with national and international partners in research and development organizations. For information, see: http://www.zef.de.

ZEF – DISCUSSION PAPERS ON DEVELOPMENT POLICY are intended to stimulate discussion among researchers, practitioners and policy makers on current and emerging development issues. Each paper has been exposed to an internal discussion within the Center for Development Research (ZEF) and an external review. The papers mostly reflect work in progress.

Hoa Nguyen, Ulrike Grote: Agricultural Policies in Vietnam: Producer Support Estimates, 1986-2002, ZEF – Discussion Papers On Development Policy No. 93, Center for Development Research, Bonn, December 2004, pp.79.

This paper is being released simultaneously as a Market, Trade, and Institutions Division (MTID) Discussion Paper No.79 of the International Food Policy Research Institute (IFPRI), Washington D.C., USA. (www.ifpri.org).

ISSN: 1436-9931

Published by:
Zentrum für Entwicklungsforschung (ZEF)
Center for Development Research
Walter-Flex-Strasse 3
D – 53113 Bonn
Germany
Phone: +49-228-73-1861
Fax: +49-228-73-1869
E-Mail: zef@uni-bonn.de
http://www.zef.de

The authors:
Hoa Nguyen, Center for Development Research (ZEF), Bonn, Germany
(contact: tnguyeu@uni-bonn.de)
Ulrike Grote, Center for Development Research (ZEF), Bonn, Germany
(contact: u.grote@uni-bonn.de)

Contents

List of Tables

List of Figures

List of Appendix-Tables

List of Abbreviations

ADB	Asian Development Bank
AFTA	ASEAN Free Trade Agreement
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CAP	Common Agricultural Policy
CEEC	Central and Eastern European Country
CEPT	Common Effective Preferential Tariff
CIEM	Central Institute for Economic Management
CIF	Cost, Insurance and Freight
EC	European Commission
ERF	Export Reward Fund
ESF	Export Support Fund
EU	European Union
FAO	Food and Agriculture Organization
FOB	Free On Board
FSU	Former Soviet Union
GDP	Gross Domestic Product
GSO	General Statistics Office of Vietnam
GTZ	German Agency for Technical Cooperation

HDI	Human Development Index
IAE	Institute of Agricultural Economics of Vietnam
IAPP	Institute for Agricultural Planning and Projecting
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
MARD	Ministry of Agriculture and Rural Development
MOLISA	Ministry of Labor, Invalids and Social Affairs
MOT	Ministry of Trade
MPI	Ministry of Planning and Investment of Vietnam
MPS	Market Price Support
NPC	Nominal Protection Coefficient
NPR	Nominal Protection Rate
NTB	Non-tariff Trade Barrier
OECD	Organization for Economic Cooperation and Development
PPP	Purchasing Power Parity
PSE	Producer Support Estimate
PSF	Price Stabilization Fund
SOE	State-owned Enterprise
SPS	Sanitary and Phytosanitary
STE	State Trading Enterprise
UNDP	United Nations Development Program
US	United States
VND	Vietnamese Dong
WTO	World Trade Organization
ZEF	Center for Development Research

Acknowledgements

We thank David Orden, Kathleen Mullen and Marcelle Thomas from the International Food Policy Research Institute (IFPRI) and Ulrich Hiemenz from the OECD Development Centre for their constructive and valuable comments. We also benefited from dialogue at presentations of this paper at the Center for Development Research (ZEF) and the international conference on "Globalization, Market Integration, Agricultural Support Policy and Smallholders", Nanjing, China, November 8-9, 2004. Our thanks also go to Jutta Schmitz from ZEF for her excellent technical assistance. Financial support from the German Agency for Technical Cooperation (GTZ) of this research on Vietnam is gratefully acknowledged.

Our special thanks also go to Mr. Trinh Van Tien (Ministry for Agriculture and Rural Development of Vietnam) and Mr. Nguyen Duc Song (Institute of Energy of Vietnam) for their data provision. We also benefited from the comments of and discussion with Professor Le Dinh Thang and Professor Le Du Phong (National Economics University of Vietnam) and Mrs. Nguyen Thi Hien (Institute for Agricultural Planning and Projecting).

This paper is being released simultaneously as a Market, Trade, and Institutions Division (MTID) Discussion Paper No.79 of IFPRI, Washington D.C., USA (www.ifpri.org).

Abstract

Since 1986, Vietnam has moved from a centrally planned towards a market-oriented system through several major economic and trade reforms. First positive results of the reform process became visible in the early 1990s when poverty declined significantly. The Vietnamese agricultural sector has also experienced high growth and impressive export achievements. The country changed from a food importer to one of the major exporters worldwide. The question arises to what extent support policies contributed to this growth, especially of the agricultural sector.

To answer this question, domestic and trade policies in the agricultural sector are analysed and the market price support (MPS) and producer support estimates (PSEs) are calculated. To account for the special conditions in Vietnam, adjustments for country- and commodity-specific factors like transportation costs, marketing margins and the quality difference of exportables (or importables) at the border and domestically are included. Selected agricultural commodities for MPS and PSE calculation comprise rice, coffee, tea, rubber, pepper, sugar, groundnut, cashew nut and pig meat. Their shares in total output exceed 70% allowing for a generalization of the calculated PSEs, thus roughly representing the whole agricultural sector.

The finding is that most agricultural products were taxed in the mid 1980s until the mid 1990s. This was mainly due to the dominance and monopoly position of the state-owned sector, restrictive trade policies like import and export quotas and licenses, and distorted markets and prices in the country. The domestic reform process and the opening of the economy since the early 1990s, however, impacted on the gaps between the domestic and international prices. Thus, since the mid 1990s, the net support of agriculture became positive and increased - but still reaching only rather moderate levels.

This study of Vietnam is the third comprehensive review conducted within an IFPRI project on understanding and assessing domestic and trade policies in the agricultural sector in developing countries. The data are meant to deliver a basis for further trade-related research to be conducted in the future.

Kurzfassung

Seit 1986 hat sich Vietnam infolge mehrerer größerer Wirtschafts- und Handelsreformen von einem zentral geplanten hin zu einem marktorientierten System entwickelt. Die ersten positiven Ergebnisse des Reformprozesses wurden Anfang der neunziger Jahre sichtbar, als die Armutszahlen deutlich zurückgingen. Zudem verzeichnete der vietnamesische Agrarsektor ein hohes Wachstum und beeindruckende Exporterfolge. Das Land wandelte sich von einem Nahrungsmittelimporteur zu einem der größten Exporteure weltweit. Es stellt sich die Frage, inwieweit politische Stützungsmaßnahmen zu diesem Wachstum, speziell im Agrarsektor, beitrugen.

Zur Beantwortung dieser Frage werden innen- und handelspolitische Maßnahmen, die auf den Agrarsektor abzielen, untersucht und die Marktpreisstützung (MPS) sowie Produzentensubventionsäquivalente (PSEs) berechnet. Um den speziellen Bedingungen in Vietnam Rechnung zu tragen, werden Anpassungen für landes- und produktspezifische Faktoren vorgenommen, z.B. für Transportkosten, Marketingmargen und die Qualitätsunterschiede der Export- oder Importprodukte an der Grenze und im Inland. Zur Berechnung der MPS und PSEs wurden folgende Agrarerzeugnisse ausgewählt: Reis, Kaffee, Tee, Kautschuk, Pfeffer, Zucker, Erdnüsse, Cashewnüsse und Schweinefleisch. Da der Anteil dieser Produkte an der Gesamtproduktion mehr als 70% beträgt, lässt sich eine Verallgemeinerung der errechneten PSEs vornehmen, welche somit den gesamten Agrarsektor repräsentieren.

Das Ergebnis zeigt, dass die meisten Agrarprodukte während der achtziger bis Mitte der neunziger Jahre besteuert wurden. Dies lag im Wesentlichen an der Dominanz und Monopolstellung des staatlichen Sektors, an einer restriktiven Handelspolitik durch Import- und Exportquoten und Lizenzen sowie an verzerrten Märkten und Preisen im Land. Der inländische Reformprozess und die Öffnung der Wirtschaft Anfang der neunziger Jahre beeinflussten jedoch die Diskrepanz zwischen Inlandspreisen und internationalen Preisen. So nahm seit Mitte der neunziger Jahre die Netto-Agrarunterstützung steigende positive Werte an, die sich allerdings immer noch auf vergleichsweise niedrigem Niveau bewegten.

Diese umfassende Untersuchung von Vietnam ist die dritte Studie, die innerhalb eines IFPRI-Projektes vorgenommen wurde, und zum besseren Verständnis und zur Einschätzung innen- und handelspolitischer Maßnahmen im Agrarsektor in Entwicklungsländern beitragen soll. Die Studie ist auch als Datenbasis für künftige handelsbezogene Forschung zu verstehen.

1 Introduction

After the World Trade Organization (WTO) was established in 1995, many developing countries have entered negotiations to join. Within these negotiations, agricultural subsidies and protection occupy a prominent place with different countries or country groups presenting different positions (Beierle, 2002). Nevertheless, there is agreement that current restrictions and distortions on the agricultural world markets need to be corrected. Article 20 (d) of the Agreement on Agriculture gives a clear mandate for further instruments that are suitable to address the commitment of creating a fair agricultural trading system that will recognize the special needs of developing countries.

While in most industrialized countries, agriculture has been highly subsidized, many developing countries have put their agricultural sectors into a disadvantageous situation by promoting and subsidizing the industrial sector, while taxing their agricultural sector. However, detailed information on agricultural protection levels in developing countries is scarce.

To fill this gap in research and to create a basis for further trade-related analysis to be conducted in the future, a project has been initiated by IFPRI to understand and assess agricultural policies and to measure producer support estimates (PSEs) for agricultural products in some selected Asian countries. The PSE calculation is a methodology developed by the Organization for Economic Cooperation and Development (OECD).

Among various protection rates, the PSEs have been increasingly used. While for all OECD countries, and recently, for many transition countries, the PSEs are regularly being measured and annually updated, less empirical research exists on protection rates in developing countries. This is partly because of the danger of measuring inaccurate PSEs due to high transaction costs or quality differences in many developing countries. Thus, adaptations of the reference prices to the specific circumstances in developing countries has to be included by accounting for factors like transportation cost, marketing margins and quality differences.

This study on Vietnam is one of the first country studies within this project, which will produce an in-depth analysis of the development of the agricultural situation and policy since 1986. It has been financially supported by GTZ funds provided by ZEF in Bonn. First papers on

measurement issues and their importance for measuring PSEs in developing countries with some empirical results from India, China and Indonesia have already been published by IFPRI[1].

With the aim of entering the WTO by the year 2005, Vietnam has actively participated in bilateral and multilateral trade negotiations since 1995. Within the agricultural negotiations, the Government of Vietnam provided a document compiling agricultural domestic support and export subsidies. This was, however, criticized due to the lack of statistics (WTO, 2003). Specifically, little is known about the actual level of protection in the agricultural sector.

In the last sixteen years, Vietnam's economy grew rapidly with an annual rate of 7%. The agricultural sector experienced an impressive development, changing the country from a food importing position to one of the leading exporters of several agricultural commodities in the world. However, how can this impressive growth be explained? Has the government largely protected the agricultural sector during this period? To what extent is the agricultural sector distorted by agricultural policy measures? Or did trade liberalization mainly contribute to this growth?

This report first analyzes the economic and agricultural situation, the reform process towards a market-oriented economy since 1986, and the agricultural policy in Vietnam. Second, data on Vietnam are analyzed, and PSEs are calculated. The results are then discussed in the context of Vietnam's trade policy. The paper ends with conclusions and policy recommendations.

[1] Kathleen Mullen, Dongsheng Sun, David Orden and Ashok Gulati, Producer Support Estimates (PSEs) for Agriculture in Developing Countries: Measurement Issues and Illustrations from India and China, MTID Discussion Paper No. 74, IFPRI, Washington D.C., 2004.
Mullen, Kathleen, David Orden and Ashok Gulati. 2004. *Agricultural Policies in India: Producer Support Estimates 1985-2002***,** Draft MTID Discussion Paper, IFPRI, Washington, D.C.
Thomas, Marcelle and David Orden. 2004. *Agricultural Policies in Indonesia: Producer Support Estimates 1985-2003,* MTID Discussion Paper No. 78, IFPRI, Washington D.C.
Cheng, Fuzhi and David Orden. 2004. *Exchange Rate Misalignment and Its Effects on Agricultural Producer Support Estimates: Empirical Evidence from India and China*, Draft MTID Discussion Paper, IFPRI, Washington, D.C.

2 Economic and Agricultural Situation in Vietnam

2.1 The Economic Background

After the reunification of North and South Vietnam in 1975, the collectivization of agriculture was promoted in the South where farmers were mostly involved in small-scale farming. Thus, initially, Vietnam largely remained centrally-planned. Production and the trading of goods were carried out by state-owned enterprises (SOEs) or cooperatives following plans made by the government. The prices were set by the state pricing committee.

During this time, the government put strong emphasis on supporting heavy industries while promoting food self-sufficiency in the agricultural sector. Poor economic performance was reflected in chronic shortages, rationing and dependence on rice imports in the early 1980s. Industrial and perennial crops were sold to the Former Soviet Union (FSU) and Central and Eastern European Countries (CEECs) in exchange for machines and technical equipment. However, with the collapse of the FSU and CEECs, Vietnam lost its main trading partners and its major sources of aid. At the same time, the inefficiency of SOEs and cooperatives caused a huge budget deficit, and inflation reached a level of 100-200%, with hyperinflation of about 300% annually at times. In 1986, the inflation rate even arrived at a level of more than 700% (Tri Hung Nguyen, 1999).

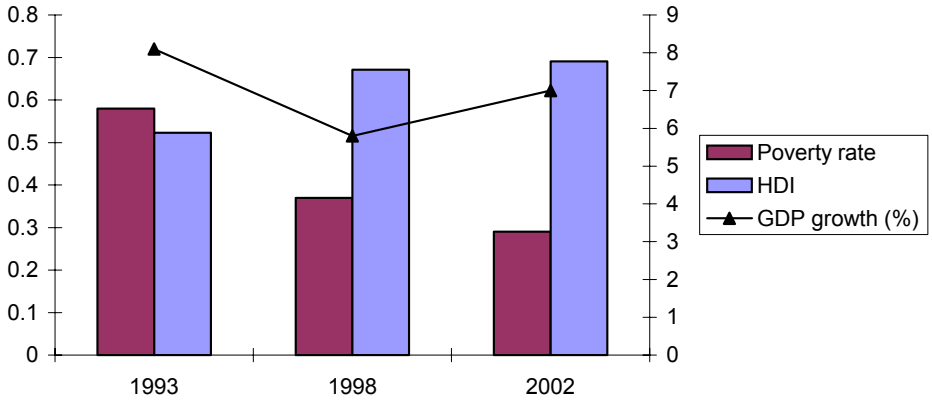
In 1986, the government started to move towards a market-oriented system. An economic reform called 'Doi Moi' was launched promoting agriculture, as well as the production of export products and consumer goods like textiles (Politburo, 1987). The contractual quota system which was established in the agricultural sector in 1981 was further refined to promote agricultural production. Farmers received land from the cooperatives for cultivation. While they had to deliver a predetermined amount of the output from this land to the cooperatives, they were allowed to keep the surplus. In addition, the reform included liberalizing domestic and international trade, opening the economy to foreign investment, acknowledging the existence of the private sector, and developing a two-tier banking system. The Vietnamese currency Dong was depreciated against the US Dollar several times.

In 1989, the government launched a comprehensive stabilization program that included contracting fiscal and monetary policies. Subsidies to SOEs were reduced, government spending was tightened, the tax system was restructured, and inflationary finance by the state bank was

ceased. In addition, the reform included almost complete price liberalization and an encouragement of the private sector.

The results of the economic reform process emerged at the beginning of the 1990s. Major achievements were the low inflation rates of around 10% per year throughout the 1990s and increases in foreign direct investment, private investments and exports (World Bank, 2004). Between 1988 and 1993, the value of exports increased 2.5 times to a value of US$ 838 million, and the supply of foodstuffs at relatively stable prices became abundant. Also GDP per capita increased from US$ 170 in the mid 1980s to US$ 480 in 2000, reaching a growth rate of about 7% annually. Poverty - measured as the share of poor households in total population - declined from 58% in 1993 to 37% in 1998 and 29% in 2002, while the Human Development Index (HDI) increased from 0.523 in 1993 to 0.671 in 1998 and 0.691 in 2002 (Figure 1).

Figure 1: Evolution of Poverty, HDI and GDP in Vietnam



Source: MOLISA (a), UNDP (2004), World Bank (2004)

In 1991, agriculture, industry and services accounted for 31, 25 and 43% of GDP. In 2001, ten years later, agriculture, industry and services accounted for 24, 38 and 39% of GDP, respectively (World Bank, 2004). This change indicates a decreasing share of the agricultural sector and an increasing share of the industrial sector in Vietnam's GDP, reflecting a changing export structure from initially more agricultural products to more industrial products. Social issues like poverty reduction have been receiving more attention by the government as a growing economy has led to an increasing availability of government funds.

Since the early 1990s, a public administration reform program has been implemented in Vietnam. The idea of this program is to decentralize by transferring fiscal and political responsibilities from the central to the local authorities. It aims at giving power and ownership to the local people. A decentralized approach may help to improve targeting the poor. However, there are still a few shortcomings of the whole decentralization process which need to be

overcome to achieve a tangible positive outcome. While political and fiscal decentralization seems to be well under way, administrative decentralization still hampers the whole decentralization efforts, thus failing to remove administrative barriers. In addition, regional inequalities are likely to increase if the government fails to implement decentralization properly (Bonschab and Klump, 2004).

Recently, the Vietnamese government has been concerned with promoting regional and international integration. Vietnam has become a member of the ASEAN Free Trade Area (AFTA), signed several bilateral trade agreements and is currently negotiating accession to the WTO. This deepening integration into world markets has major implications for Vietnam's economy and policies. Tariffs and non-tariff trade barriers (NTBs) for international trade have been reduced and more sectors opened to foreign investors, subsidies to SOEs have been cut and export quotas have been lifted. Second, the government reduced discriminations against private investors providing a legal system, facilitating their establishment and operation.

2.2 The Agricultural Sector

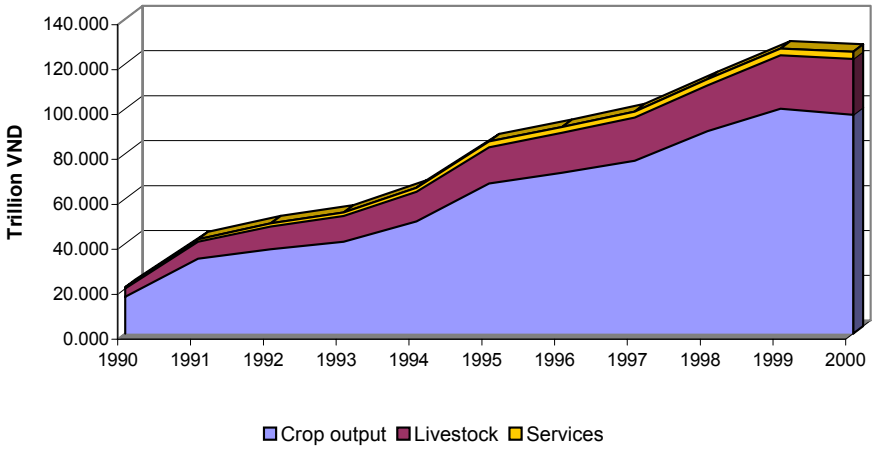
During the 1990s, the agricultural sector of Vietnam grew by about 4.4% annually reaching a peak of up to 7 % in 1992. This growth rate is comparable to China (4.6%) and also exceeds many other developing countries (Kherallah and Goletti, 2000).

2.2.1 Production of Major Commodities

Vietnam's topography and climatic conditions are favorable for growing tropical as well as subtropical crops. About 2.8 million hectares of land are being cultivated of which one million hectares are being irrigated.

As can be seen in Figure 2, agricultural development is largely due to the increase in crop output. The production and export of livestock products is mainly constrained by quality aspects related to livestock and backward processing technology.

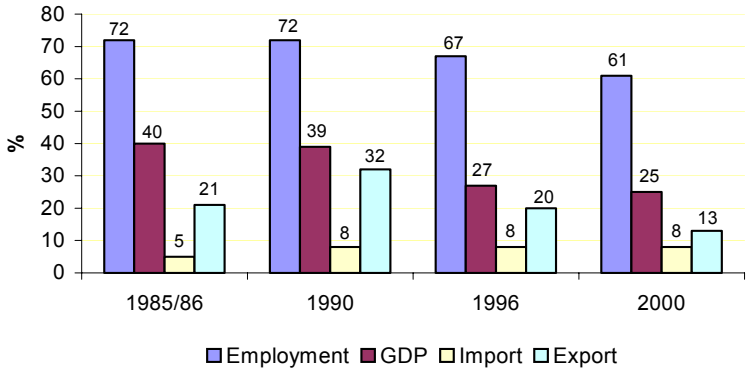
Figure 2: Development and Structure of the Agricultural Sector, 1990-2000



Source: GSO

In 2000, the agricultural sector accounted for about 25% of GDP, 13% of export revenue, 8% of total import values and created employment for 61% of the labor force (Figure 3). The share of agricultural export in total export of Vietnam is higher than in other countries in the Southeast Asian region and three times the average level of the world (Anderson, 1998). The shares of agriculture in GDP and total employment declined from 40% and 72% in 1985 to 25% and 61% in 2000, respectively. Nevertheless, they remain rather high emphasizing the important role of agriculture in the economy.

Figure 3: Shares of agriculture in GDP, employment and foreign trade, 1985-2000



Source: World Bank (2004), FAO (2004), MOLISA (b), GSO

Despite such important role of the agricultural sector in the Vietnamese economy, this sector has received much less protection than other sectors (Table 1). The effective protection over agriculture even declined over the five years from 1997-2002. The remarkably high protection over manufacturing was argued to protect infant industries and has been largely applied to import substitution sectors like vehicles (motorbikes and automobiles); chemicals and chemical products; food and beverages; as well as iron, steel and non-ferrous metals. Industrial exports of main commodities other than crude oil, included garments and footwear, handicrafts, and electronic products, and increased over time with a growth rate smaller than agricultural exports.

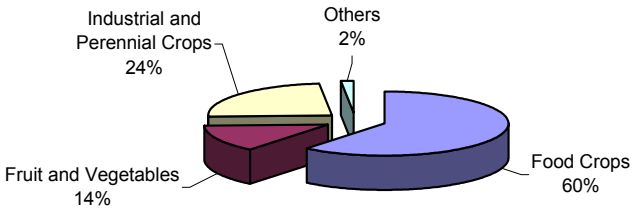
Table 1: Effective protection over Vietnamese economic sectors, 1997 and 2002

Sector	1997	2002
Agriculture	7.7	7.4
Mining	6.1	16.4
Manufacturing	121.5	96.0
Average	59.5	54.1

Source: Athukorala (2002) quoted in Auffret (2003), p. 6.

Regarding the structure of agricultural crops, food crops accounted for 60% of total value of agricultural output, while industrial and perennial crops, and fruit and vegetables accounted for 24% and 14%, respectively (Figure 4).

Figure 4: Share of agricultural crops in total value of plant output, 2000

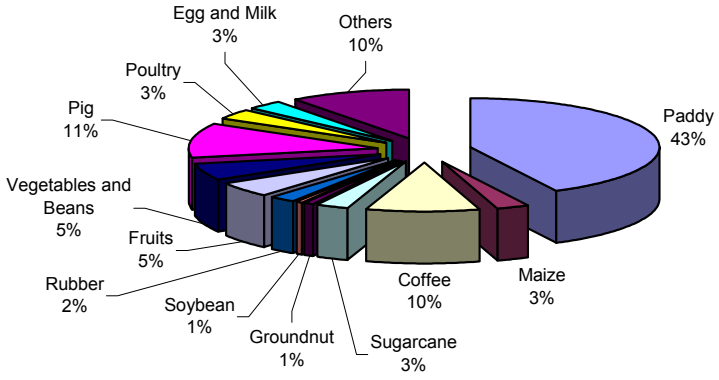


Source: GSO

Within food crops, rice is the main item, accounting for 85% of total cultivated land and 43% of total output value in 2000. Vietnam has even become the fifth largest producer of rice worldwide. Most of it is produced by wet rice cultivation in the Red and Mekong River Deltas of Vietnam. The dominance of rice is due to the fact that self-sufficiency in rice was promoted throughout the first half of the 1980s. During the 1990s, the annual growth rate of paddy rice production was 4.4%. This increase was mainly due to seed improvement and crop

intensification. Thus, rice yields grew from 2.8 tons/ha in 1986 to 3.1 tons/ha in 1990 and 4.1 tons/ha in 2000. In addition, major incentives to rice production were provided by the land reforms, the improved infrastructure especially with respect to irrigation, and easier access to inputs like fertilizer and pesticides. Other important food crops include maize, as can be seen in Figure 5, but also sweet potatoes and cassava.

Figure 5: Share of main products in total agricultural output value, 2000

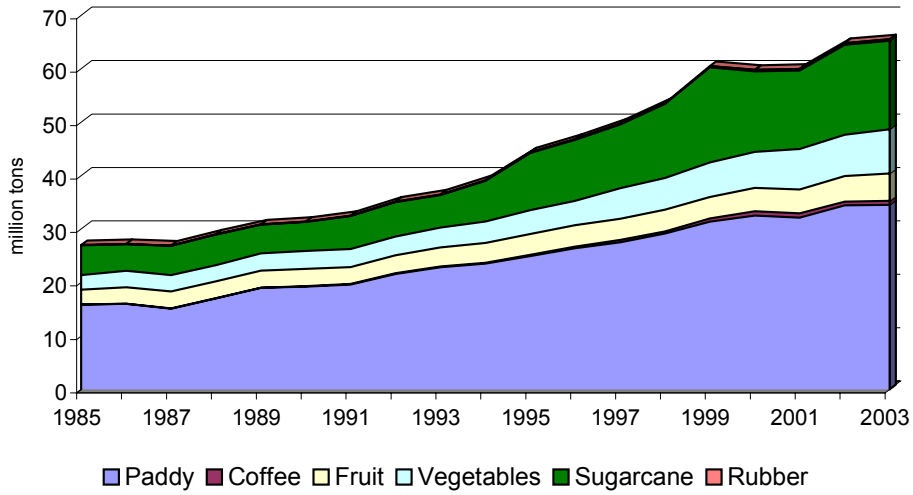


Source: GSO

Coffee is the most important industrial crop in Vietnam. Ninety-five percent of the Vietnamese coffee is the Robusta type. It has been produced since 1975, mainly on small-scale coffee farms equipped with different processing knowledge and technology. Thus, the quality of coffee varies in Vietnam. The yields of coffee amount to about 1,300 kilograms per hectare, which is twice the world average. Apart from coffee, important other industrial and perennial crops are rubber, sugarcane, groundnut, soybean, tea and pepper (Figure 5).

In the late 1990s, world market prices of rice and coffee declined so that the government started to promote diversification away from rice and coffee. In Figure 6, it can be seen that there has been a steady increase in production volumes for almost all products over time.

Figure 6: Production of agricultural commodities, in million tons, 1985-2003



Source: FAO (2004).

Sugarcane production in general followed an increasing trend since 1975 though yields remained low and there have been considerable fluctuations in output in some years. In 1994, a one-million-ton sugar program was launched, which aimed at achieving self-sufficiency in sugar by 2000, thus replacing sugar imports, and creating employment for farmers. Based on this program, sugarcane output increased steadily - largely due to planted area expansion - except for 2000. Since 2000, the inefficient performance of many small sugar refineries resulted in the switch of farmers to other crops and the decline in sugarcane volume.

Also the rubber production has steadily increased over time. It has been mainly produced in state-managed farms, and farmers have been given specific tasks of planting, caring for rubber trees and gathering rubber latex. These state-managed farms belong either to the General Rubber Corporation (an SOE at the national level) or to SOEs at the provincial level. In 2000, the state-managed farms accounted for 71% of total land used for growing rubber trees and 90% of total rubber latex output. Rubber grown by farm households accounted for the rest, and was mainly developed since 1993.

Vietnam is the third biggest producer of cashew nut in the world. Output of cashew nut increased rapidly with large fluctuations during the 1990s. Productivity, though being higher than in other countries, is estimated to be only one third of its potential (IAPP, 1997). Similarly to coffee, more than 90% of the processed cashew nut is exported, and only 7-8% are domestically consumed due to the relatively high price.

Vietnam ranks tenth in terms of groundnut production in the world. Production generally takes place on small-scale farms with low efficiency. Thus, total groundnut output increased

mainly due to area enlargement rather than productivity improvement. Vietnamese groundnut productivity is just half or one third of that of other Asian neighboring countries.

Tea production shows modest growth before 1996 and more rapid thereafter. Vietnam ranks fifth in the world in terms of tea output[2]. Farmers plant tea and process 35-40% of their tea output. The remaining 60-65% is sold to processing companies (Dinh Long Nguyen et al. 1999). Productivity of Vietnamese tea remains lower than in the world and other Asian countries.

Vietnam is the biggest pepper producer in the world, although there were wide fluctuations in the growth of pepper output from 1986 to 2002. Pepper is generally planted on small-scale farms with on average less than two hectares. All activities in pepper production from choosing seeds, planting, harvesting and processing are conducted in farming households in traditional ways with no technical means. Hence, the quality of pepper remains low. In addition, pepper seeds are generally old, poorly selected, they differ widely from each other, and pepper's moisture cannot be properly controlled.

Livestock accounted for 14% of agricultural GDP with the share of pigs amounting to almost 60% of total livestock value in 2000. During the 1990s, the livestock sector increased steadily with an annual growth rate of 7%. Pork is the most important meat being consumed, followed by poultry (15%) and cattle (8%)[3]. It is mainly consumed because its price is lower than that for poultry and beef. Pigs are largely raised by households. The number of pigs in each province is roughly proportionate to the number of households in that province. There is large variation in the scale and technology of production, with the dominance of smallholders and traditional technologies. Thus, productivity remains very low. Pig meat is mainly for domestic consumption (95-96%) leaving only 4-5% for export.

The production of poultry heads accelerated throughout the 1990s with large variation in scale and technology. In the early 1990s, the export of poultry and beef surged but remains minor compared with pig meat.

2.2.2 The Processing Industry

Agricultural exportables other than rice are mainly semi-processed (shelled coffee, dry rubber latex, and shelled groundnut). Processed items account for a very small part of the total export volume. This is due to the use of backward technologies by processing factories (Trung Que Nguyen *et al*., 1997). Currently, there are a few factories with limited capacities that polish rice, and process tea and coffee. The high share of unprocessed commodities in total agricultural export is a main reason causing a gap between export prices of Vietnam and international prices.

[2] Xinhua News Agency: http://news.xinhuanet.com/english/2002-05/20/content_400582.htm
[3] Institute for Agricultural Planning and Projecting (IAPP, 2001): Report on Strategy for Developing the Livestock Sector in Vietnam until 2010, Hanoi.

The gap nevertheless follows a declining trend, reflecting the improvement in the quality of Vietnamese agricultural exportables (UNDP, 2004, p. 15).

The processing industry in the sugar sector changed substantially in the 1990s. Within the one-million-ton sugar program, over US$ 1 billion was spent on building sugar processing factories, facilitating the infrastructure in cane-producing areas and granting preferential credit to sugar factories. In addition to credit subsidies, import was restricted and local policies gave priority to the conversion of land for growing sugarcane.

Before 1996, sugar refineries absorbed only 20% or 1.3-1.5 million tons of cane. Most of the cane, nearly 5 million tons, was still processed in traditional mills with an extraction rate amounting to only 50% of the extraction rate of industrial mills, and producing only low quality sugar. In 2000, Vietnam produced around 1 million tons of sugar of which about 75% were refined in factories and only the remaining 25% were processed in traditional sugar mills.

Nevertheless, the Vietnamese sugar sector remains highly inefficient. Low conversion rates from cane to sugar in refineries stem largely from backward technology and low economies of scale. From the total forty-four sugar refineries, only six are relatively large while the others are very small by international standards. Eight operate with 80% of their capacity, have no overdue debt, and are located in stable sugarcane areas. Fourteen factories operate with 60-80% of their capacity, and cannot pay overdue debt, while the remaining twenty-two operate with less than 50% of their capacity and have outdated technology leading to high production costs and annual losses. These refineries were mostly built in locations far from the cane growing areas, thus lacking cane for processing. The inefficiency of the sugar factories is reflected not only in the fact that they suffer high losses but also that they need capital injections from the state budget to maintain operations. With respect to the first mentioned eight factories, the state has to write off their payable value added tax of VND 260 billion from 2001-03. With respect to the fourteen factories, the state provides VND 1,100 billion for the period 2003-05 including writing off their payable tax in 2001-03, injecting working capital. Regarding the last twenty-four sugar factories, the state spends VND 5,000 billion of which VND 3,277 billion are used for paying their overdue debt and VND 1,689 billion for covering their losses[4].

Also the rubber processing industry remains rather weak although many factories have been upgraded and equipped with modern technology. However, the difference in existing processing technologies in factories causes variance in the quality of rubber latex resulting in difficulties in selling the products. Industries using rubber latex (automobile, motorbike, healthcare, house goods) are in Vietnam underdeveloped absorbing only 20% of rubber latex each year. The rest, 80% of rubber latex, is exported. In general, the quality of Vietnamese

[4] Vietnam Electronic Newspaper (12.06.2004), available at: http://vnexpress.net/Vietnam/Kinh-doanh/2003/09/3B9CBB17/

rubber latex is comparable to that of other Asian countries like Malaysia or Thailand where it also varies in terms of quality.

The quality of Vietnamese cashew nut is internationally comparable. In the last ten years, the state has subsidized the development of the processing industry for cashew nut. Generally, the marketing chain for cashew nut includes farmers, private traders, processing factories which do the shelling, drying, classifying, and packaging for export, and exporting companies. In recent years, processing and exporting companies started buying directly from farmers. As the harvest lasts two months only, while the processing takes place over the whole year, large reserves are kept. Processing companies, however, usually lack funds to establish reserves and thus depend on private traders.

However, with respect to groundnut, the quality in terms of weight and the oil content of Vietnamese groundnut is low by international standards. In addition, backward conditions in conservation, transportation and processing contribute to high moisture and low quality. The groundnut processing industry is highly underdeveloped. In general, technology in the processing factories is simple and the quality of oil is low (Trung Que Nguyen *et al*., 1997). The production of cooking oil just started recently and is subject to tariff protection. Other processed products from groundnut like margarine or canned groundnut, are rare and uncompetitive as compared with imported counterparts. Exported groundnut is shelled by farmers with simple equipment, then sorted and packed by the exporting companies.

About 85% of the tea output is processed and mainly used for export while the rest is processed in households for domestic use. In the tea sector, of 174 processing companies, 12 are large scale, 46 medium and 116 small (IAPP, 2002, p. 20). Processing technologies have been improved, especially in large and medium scale processing companies but hardly in the numerous small-scale companies. The quality of tea, therefore, remains poor.

In the meat sector, most processing factories have backward equipment; some factories recently built have more modern technology but operate below their capacity because of the lack of standard lean meat and scattered distribution of pig raising making the gathering process and transportation difficult and costly. In the early 1990s, the rate of loss in transportation was about 10%. The processing price is therefore high causing difficulties in selling domestically as well as penetrating and expanding foreign markets. Channels for distribution of pig meat in domestic rural areas are either (i) farmer to slaughterer *cum* retailer to consumer or (ii) farmer to slaughterer to retailer to consumer. In urban areas, channels for distribution are (i) farmer to trader to transporter to slaughterer *cum* wholesaler to consumer and (ii) farmer to trader *cum* transporter to processing and exporting factories.

Recently, the government has invested in upgrading technology in processing and in granting export rewards to exporting companies. Vietnamese meat export prices, however,

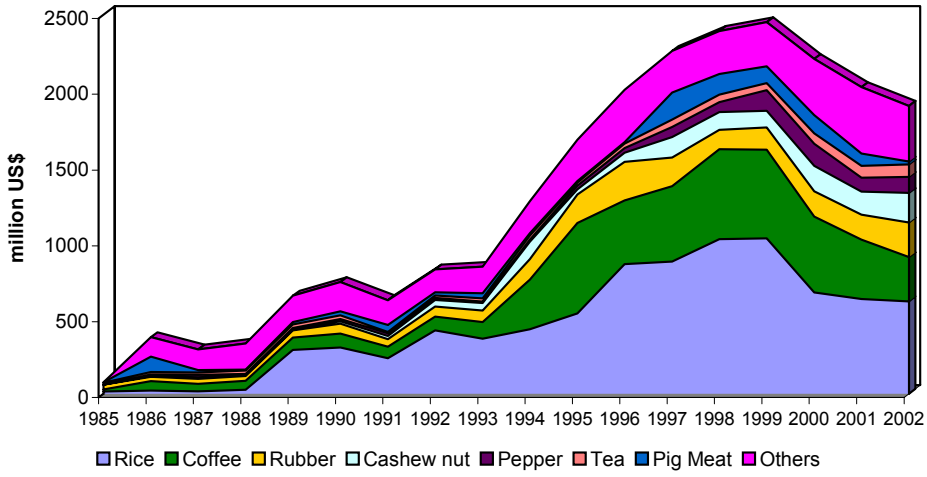
belong to one of the lowest in the world. This is due to the low quality of the pig meat and the low capacity of processing factories.

2.2.3 Trade of Major Commodities

Agricultural Exports

At the beginning of the 1980s, Vietnam turned from an importer to a net exporter of agricultural products. Due to the trade liberalization and agricultural reforms in Vietnam, the value of exports in the agricultural sector increased manifold with the main export commodities being rice, coffee, pepper and cashew nut, but also rubber, tea, groundnut, soybean, fruit and vegetables, and pork (Figure 7). Within fifteen years from 1985 to 1999, agricultural export revenues rose from around US$ 100 million up to nearly US$ 2,400 million. Export of agricultural products together with export of crude oil, seafood and textile and footwear represent main sources of foreign exchange earnings to the country.

Figure 7: Export revenue of major agricultural products of Vietnam, 1985-2002



Source: FAO (2004)

By the end of the 1990s, Vietnam ranked first in terms of pepper export turnover and second in terms of rice, coffee and cashew nut revenue worldwide. However, since 2000, the export value declined. This was in part the result of recent declines in export volumes. But also international prices of main agricultural export products like coffee, rubber, rice and pepper decreased since 1999 and 2000. For example, coffee export volumes in 2001 exceeded the volume in 1996 by three times, but export revenue in 2001 was lower than in 1996. Rice, rubber and pepper experienced similar situations.

Vietnam has become the second largest exporter of rice worldwide with the Mekong River Delta being the major exporting area of rice in Vietnam. At the end of the 1980s, Vietnam was still a rice importer but with decreasing import volumes. Since 1989, its rice exports started to grow with little fluctuations at the beginning of the 1990s but with a steady increase since 1995. In 1999, rice exports stagnated again (Figure 8a). The steady increase was mainly a result of the economic reform from 1986, as well as the domestic and international trade liberalization since 1989. The economic reform raised rice output and this higher output volume together with the increased export quota led to a sharp increase in export volume. The fluctuations in export at the beginning of the 1990s were partly due to the fact that Vietnamese trading enterprises lacked experiences in accessing foreign markets.

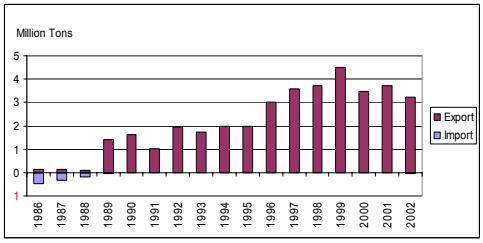
In 1997, the government started to integrate the national rice markets by lifting internal barriers to trade across regions. Since 1998, private companies have been allowed to export rice. But a large part of the export quota was still allocated to STEs. The export quota is used to ensure food security and price stability. Specifically, state-owned focal exporters of rice in 1999 which were appointed by the government and listed in Decision 250/QD-TTg dated December 24, 1998 accounted for about 90% of total export quota for the first nine months of the year. In 2001, the export quota was eliminated. Private companies can export without any restrictions since then.

Vietnam is the second largest exporter of coffee world-wide and the world's largest exporter of Robusta coffee. It has exported coffee since 1975 with a sharp increase of the export volumes during the 1990s (Figure 8b). Before 1990, 80-85% of the total coffee exports went to the FSU and CEECs in exchange for machinery and equipment. Export prices did not encourage coffee planting, they even discouraged it (Thi Bich Loc Tran, 2002, p. 64). Since 1991, Vietnamese coffee has been exported widely to different countries.

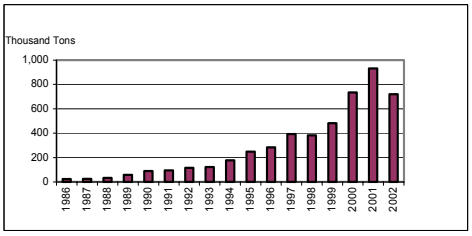
Exported coffee is largely shelled coffee, 80% of which is produced by farmers and 20% by exporting companies. The quality of exported coffee varies due to the small-scale size of the coffee farms and their diverse technologies. The variance in coffee quality and the dominance of the Robusta type whose price is lower than the price for the Arabica type lead to lower export prices for Vietnamese coffee compared with other countries.

Figure 8: Development of export volumes of major agricultural products, 1986-2002

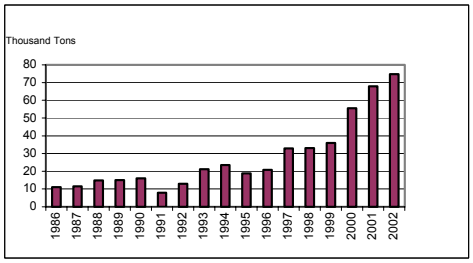
a. Rice



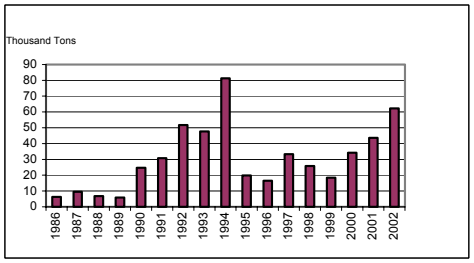
b. Coffee



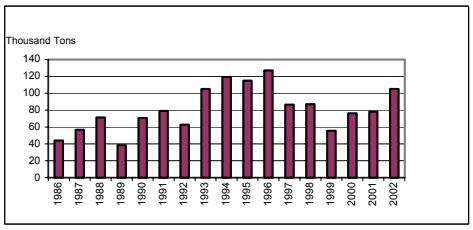
c. Tea



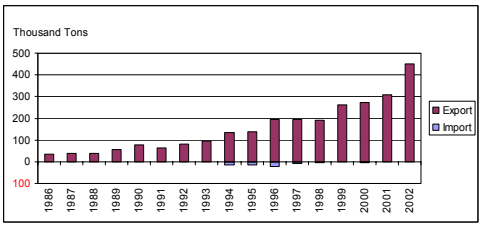
d. Cashew nut



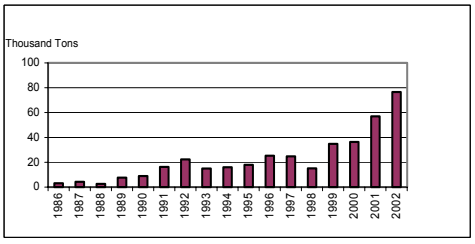
e. Groundnut



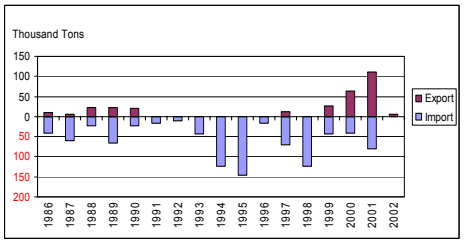
f. Rubber



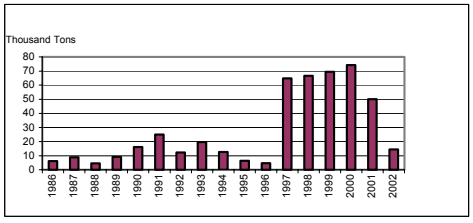
g. Pepper



h. Sugar



i. Pig meat



Source: FAO

Before 1990, there were three exporters, all belonging to the Coffee Export Corporation (Lien hiep xuat khau ca phe). In the early 1990s, many companies competed in buying and exporting coffee because of high profit margins in coffee trading. In response, the Government launched the focal exporter policy in 1994: those members of the Coffee and Cacao Association whose annual export volume was above 200 tons were accepted as focal exporters and could export without any quantitative restrictions. During 1995-1997, there were 30 focal exporters of which 20 accounted for 90% of the export volume. The focal exporter policy was phased out in March 1998. Currently, there are around one hundred state and private exporters in the coffee sector.

Vietnam is also the second largest exporter of cashew nut in the world (Figure 8d). Similarly to coffee, more than 90% of the processed cashew nut are exported, and only 7-8% are domestically consumed due to the relatively high price. In the last ten years, the country has developed its processing industry and reduced the share of unprocessed cashew nut in total exports impressively. In 1990, 90% of the cashew nut exports were unprocessed, in 1993 around 50% and at the end of 1997 only 10%.

In terms of groundnut export volume, Vietnam ranks seventh in the world (Figure 8e). About 50% of groundnut production is exported. Since 1986, groundnut has been exported to Southeast Asian countries (Singapore, Indonesia, and Malaysia). Some of these countries (like Singapore, China, and Hong Kong) are intermediaries. However, export generally suffers from market instability, the small size of the producers, and low efficiency. Due to the low quality, Vietnamese groundnut generally achieves only low export prices. Exported groundnuts are mainly shelled but not further processed. Shelling machinery used in exporting factories are of simple technology.

Vietnam ranks eighth in terms of worldwide tea export[5], and it exports 60% of its total tea output (Figure 8c). The tea companies process fresh buds into dried buds and export their products, mainly in the form of raw materials (dried buds) and recently a small share as finished products. Importing countries then process it for reselling or re-exporting.

Before 1986, the state held a monopoly position in exporting tea. Tea was exclusively exported by the Union of Tea Enterprises, which was state-owned. Since 1991, export of tea has been liberalized (Thi Bich Loc Tran, 2002). However, SOEs at the national level still account for 60% of tea export (ISG, 2002). SOEs at the provincial level, private enterprises and joint-venture enterprises account for the remaining 40%.

After 1990, rubber exports grew more quickly as international trade has been liberalized (Figure 8f). However, since its own processing industry is underdeveloped, Vietnam mainly

[5] Xinhua News Agency: http://news.xinhuanet.com/english/2002-05/20/content_400582.htm

exports rubber latex. Currently, China is the biggest trading partner, importing 70% of Vietnamese rubber latex.

Vietnam is the second largest pepper exporter in the world (Figure 8g). With the large amount of pepper exports, Vietnam will join the International Pepper Community (IPC), an organization currently including Brazil, India, Indonesia, Malaysia and Sri Lanka[6]. About 90-95% of pepper output is exported. Exported pepper is mainly unprocessed (black) pepper. Since the quality of pepper remains low, Vietnamese pepper is usually sold to intermediate countries for further processing so that export prices of Vietnamese pepper are generally low.

Exporting companies sign export contracts and buy pepper from private assemblers who gather pepper from farmers. There have been no long-term contracts between farmers and private assemblers or exporting companies. When the international price is high, private assemblers compete in purchasing pepper from farmers, and when the price is low, they refuse buying from farmers. Fluctuations in international prices are passed on to farmers; exporting companies and private assemblers take small and constant margins (World Bank, 2002, p. 14). Export volume increased over time but fluctuations in international prices lead to significant export turnover changes year by year.

Vietnam changed from being an importer of sugar between 1991 and 1998, to being an exporter and importer from 1999 to 2001 (Figure 8h). In 2002, however, trade was negligible again. Importing sugar is subject to license but in practice, no license was issued since 1997. Only trading companies, who had been issued a license before, were eligible to import. Since 1998, sugar has been put on the list of commodities whose imports are administered by the Government. Despite being promoted by such measures, the Vietnamese sugar sector faces high inefficiencies.

Pig meat is a major livestock exportable from Vietnam. Its export volume increased quickly in the late 1990s, however, also declined quickly again from 2000 to 2002 (Figure 8i). Major export markets for pig meat from Vietnam are Russia, China, especially Hong Kong, Taiwan and Malaysia. Vietnamese export prices belong to the lowest in the world. This is due to the low quality of the pig meat and the weak capacity of processing factories. The quality of pig meat remains problematic as the percentage of lean meat is low and pigs with the high lean meat account for just 1-2% of the total population. Export of pig meat is basically in the form of frozen meat (the whole carcass, half carcass or a quarter of carcass) and canned meat. Ham and other products from lean meat account for a negligible part in pig meat exports from Vietnam.

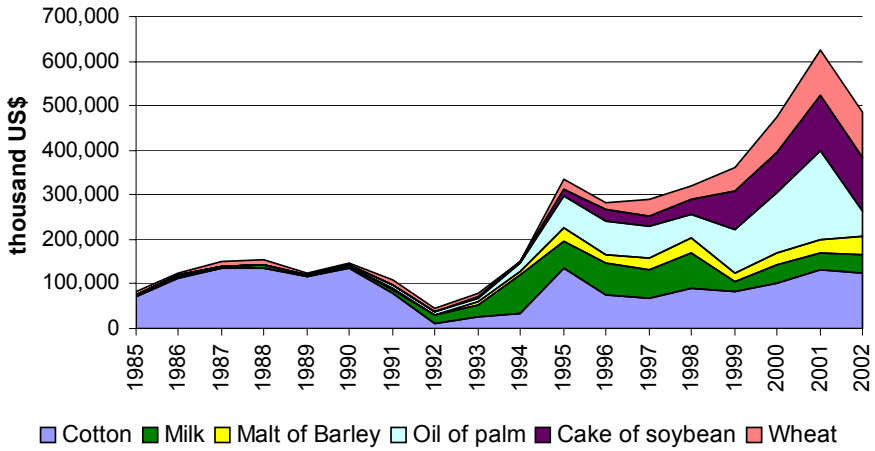
[6] http://www.mofa.gov.vn:8080/Web%20server/ForeignPolicy.nsf/0/3f59cc3ef306806947256e75002dab1e?OpenDocument (accessed on 28.07.2004)

State-owned processing companies are the main exporters of pig meat, exporting different kinds of pig meat products. Private slaughterhouses in general face difficulties in meeting veterinary and sanitary and phytosanitary (SPS) requirements of foreign importers. Current foreign importers require that slaughterhouses be certified and inspected for hygiene, and that meat is being tested for hygiene and quality (antibiotic residuals and food-poisoning bacteria (McLeod *et al*., 2003)).

Agricultural Imports

Import values of agricultural products also increased over time, however, at a lower level. In 2001, the import value reached half the value of exports in agriculture. Main imported agricultural commodities are cotton, malt, and milk, palm oil, soybean cake and wheat (Figure 9). Import of agricultural commodities has been deterred by tariff walls. The tax rate on most agricultural importables ranges between 20-50%, except for tobacco and alcohol where it reaches 100%.

Figure 9: Development of values of major agricultural imports, 1985-2002



Source: FAO (2004)

3 Agricultural Policies

Before 1986, agricultural production was organized in cooperatives following annual plans made by the state. There was equal output distribution regardless of worker productivities. Domestic and international trade was highly restricted. As a result, agricultural output stagnated and starvation occurred in several areas. During the 1976-80 period, Vietnam had to import 170 thousand tons of rice and 1.1 million tons of food crops annually (Hoang Kim Tran, 1994). This called for reform in agriculture. Since 1986, agricultural policy has changed from a centrally planning and autarkic system to an open and market-oriented one. In the reform package, the most important components are land reform, trade reform, and the development of policy instruments to assist agricultural production in general. In addition, the producer price of all commodities was liberalized (Hoang Kim Tran, 1994).

3.1 Domestic Policy

As mentioned in the previous section, the agricultural sector is much less protected than other economic sectors in Vietnam. In the domestic agricultural sector, the government of Vietnam is concerned with securing agricultural prices, linking agricultural production and agro-industries, and raising off-farm activities to reduce underemployment in agriculture and rural areas. Details on the land reform and other domestic policy components are given in the following sections.

3.1.1 Land Reform

The land reform was initiated in 1981. The Directive No. 100 issued on January 13, 1981 allowed cooperatives to assign parcels of land to farm households based on an annual production contract. While the farmers were responsible for planting, weeding, and harvesting, the cooperative was in charge of harrowing, ploughing, irrigation and drainage, and pest control (Hoang Kim Tran, 1994). Most of the harvest had to be delivered to the cooperatives. While cooperatives still acted as a planning agency for households' farming activities, they no longer strictly controlled the sale of products. Farmers were allowed to sell their products in free markets provided that they fulfilled their production contracts with the cooperatives. This encouraged farmers to increase investments in their land resulting in a rise in agricultural output. However, no legal base for the transfer of land from cooperatives to households yet existed.

In 1988, Resolution 10 was launched giving farmers the right to use their land for 10-15 years, to fully control the production process and to hold about 40% of their contracted output.

However, a turning point was marked in 1993 by the Land Law which granted long-term land use rights to farming households as well as the five rights to exchange, transfer, lease, inherit, and mortgage. The long-term use rights referred to 20 years when the land was used for annual crops, and 50 years in the case of perennial crops. The Land Law, however, also put a ceiling on the amount of land that can be allocated to households: for annual crops, the limit is two hectares in the central and northern provinces and three hectares in the southern provinces, and for perennials the limit on land holdings is ten hectares.

3.1.2 Input Subsidies

In the transition process, the state reduced its control and direct intervention in production and activities of economic entities. However, indirect policies are designed from the state to encourage and facilitate agricultural production. They comprise input subsidy policies and general supporting policies.

a. Seeds and breeds subsidies

There are many programs in which seeds or breeds are provided to farmers at subsidized rates. Many of these programs are conducted at the provincial level and thus are difficult to quantify (Barker et al., 2001). At the provincial level, seed subsidies of about 20-50% of the seed value have been granted to promote tea production.

At the national level, the following three programs exist:

- Program 125 provides VND 10-13 billion every year for the breeding of pigs, cows and poultry.
- Program 225 provides about VND 100 billion. The main ideas of this program are to upgrade research institutes which develop crop and animal seeds, to subsidize seed import and promote seed multiplication.
- The last program, the agricultural extension scheme initiated in 1993, provides a subsidy of VND 30-50 billion each year. It supports funds for the transfer of new technologies into agricultural production. The seed assistance accounts for 60% of the total program funds. According to this scheme, 60% of the seed prices in mountainous areas are subsidized, while in plain areas, these are 40%.

b. Fertilizer and pesticides

In Vietnam the use of fertilizer grew steadily since 1980. Its consumption amounting to 263 kilograms per hectare of cropland in 1999 is very high compared with the Asian average consumption of 149 kilograms and a worldwide average of 94 kilograms. A large part of the fertilizer used has been imported. Fertilizer importers have access to subsidized credits (Goletti, 1998, p. 17), and companies that produced fertilizer and pesticides can obtain concessional loans

as well. Specifically, in the late 1980s, the monthly interest rate of loans for working capital in such companies was stipulated to be 4.65% compared with the normal interest rate of 5.10% and more (Decision No. 73-NH/QD on May 31, 1989). In 1998, fertilizer SOEs received an interest rate subsidy of VND 21.6 billion (Kherallah and Goletti, 2000).

The question arising is whether farmers actually receive subsidies through fertilizer. A simple comparison shows that domestic prices of fertilizer are higher than international prices. In case the gap between domestic and border prices is greater than transportation costs and marketing margin of the trading companies, the indirect support has not trickled down to farmers (Goletti, 1998). In this study, internal adjustment is made to the c.i.f. price of imported fertilizer and the resulting adjusted reference price is in some years higher than the retail price prevailing in the Vietnamese market, indicating that farmers receive subsidies through fertilizer.

c. Water fees

Approximately half of the cultivated land in Vietnam is irrigated. Farmers pay a subsidized fee for using water for irrigation. The irrigation fee is set by each province under the guidelines of the Ministry of Water Resources. The amount collected accounts for 4 to 8% of the normal crop yield (Decree 112/HDBT dated August 25, 1984) and is estimated to be half of the funds needed for providing adequate operation and maintenance (Barker et al. 1994). Half of the irrigation maintenance and operation costs are subsidized. Irrigation management companies use the collected fees for paying salaries to their workers, and for major repairs. In addition, they receive funds from the government.

d. Loan concessions

The Bank for Agriculture and Rural Development was established in December 1990. It provides credit with preferential interest rates to farmers who live in mountainous areas, on islands or belong to the Khmer minorities. These farmers receive credits with an interest rate which is 30% lower than the one being charged to other farmers (Decision No. 189/1999/QD-NHNN1 on May 29, 1999). In addition, there are other loan concessions like lending to overcome natural disasters. In priority regions like rural and mountainous areas, lending interest rates were even below deposit rates in the early 1990s (Ngoc Phong Pham, 1992).

In 1995, the Bank for the Poor was established providing concessional loans to poor households with interest rates equal to half of the formal interest rates. In addition to government support for interest rate differentials, it freezes or writes off bad debts like happened in the processing industry of the sugar sector during the 1990s.

Farm households growing rubber, for example, also receive loans from government programs (poverty reduction program, greening bare land program, etc.). Also tea production is

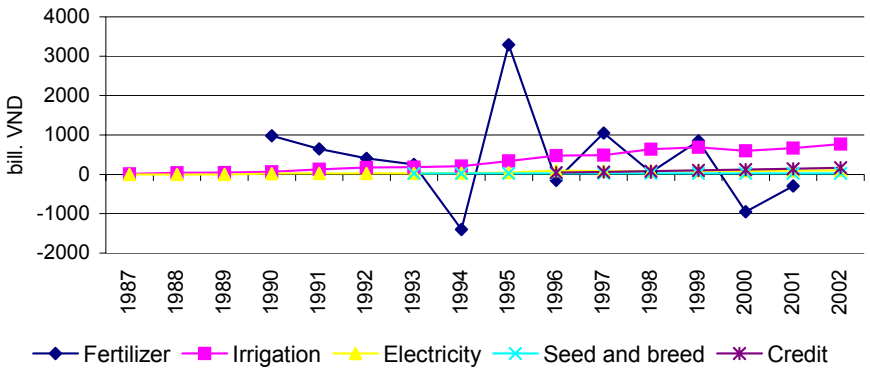
promoted at the provincial level by providing loans with preferential interest rates and lowering land tax for expansion of tea farms or intensive farms.

e. Electricity

For electricity used in agricultural production, farmers are charged lower subsidized prices than in other sectors. In this study, the electricity subsidy is calculated by the amount of electricity consumed in the agricultural sector multiplied by the price difference charged from industrial and agricultural producers. It is about US$ 10 million each year.

To sum up, detailed information on input subsidies of the Vietnamese agricultural sector is shown in Figure 10. Total input subsidies become significant since 1995. Irrigation subsidy is the most important element, followed by fertilizer subsidy. Fertilizer subsidy is, however, unstable changing considerably year by year.

Figure 10: Input subsidies of the Vietnamese agricultural sector (billion VND)



Sources: GSO, MARD, Bank for the Poor, and Institute for Energy.

f. General supporting policies

These policies aim at facilitating agriculture but differ from input subsidy policies in the sense that they cannot be disaggregated for individual commodities. In Vietnam, these policies account for 7.2% of total domestic support (ISG, 2001) and include the following:

- science research: during 1996-98, the Vietnamese government spent VND 200-260 billion per year on scientific research of the agricultural sector.
- training: from 1996 to 1998, VND 120-140 billion was spent each year on training agricultural technicians, economists, specialists and workers.

- agricultural infrastructure: every year, the Vietnamese government spends VND 3,000 billion on building and upgrading irrigation and drainage systems, dams, and technical infrastructure of institutes, colleges, etc.
- food security: stocks of rice and maize are being kept.
- environmental programs: these receive VND 300 billion from the state budget each year.

3.2 Trade Reform and Policy

The trade of agricultural products has been liberalized internally and externally since 1986. Since then, all types of goods are allowed to be circulated freely within Vietnam. Price has been deregulated. Business licenses, taxes on agricultural trading activities across regions and check points at inter-provincial borders were dismantled. Imports and exports from and to Vietnam were affected by the trade reform which includes lowering import and export tax and removing non-tariff barriers (decentralizing the trading system and removing the restrictions on trading rights) as well as exchange rate distortions.

a. Price reform

Before 1986, prices were specified by the state. Input prices of all crop production were kept stable to facilitate farmers. The state maintained low retail prices of rice and paid for the gap between the retail and farm prices. Then prices based on negotiation between sellers and buyers were introduced but still had to follow instructions of the state. As a matter of fact, the instructed prices could not follow and reflect fluctuations in market demand and supply. In May 1989, prices were allowed to be specified by producers and customers. The state no longer intervened directly in agricultural price determination. Nevertheless, the paddy price below the production costs during the time of good harvests called for state intervention. The National Reserve Department was required to purchase a great deal of paddy and rice at instructed prices. Decision No. 137/HDBT on April 27, 1992 of the Council of Ministers marks an important change in the price reform process. In this Decision, the state specifies a maximum price of rice in focal markets, maximum costs of transporting foods from the South to the North and to mountainous areas, maximum price of import urea in foreign currencies, minimum price of paddy bought from farmers and minimum export price in foreign currencies. To stabilise the market prices of crucial items, the Price Stabilisation Fund was established in 1993 (Decision No. 151-TTG dated April 12, 1993). Its purposes are (i) to provide funds for stockholding of crucial commodities of which foods, important crops and agricultural inputs are considered a priority, and (ii) to assist the fund's contributors whenever international or domestic prices experience sharp fluctuations (Circular No. 03/TT-LB on May 28, 1993).

b. Import and export quotas

In the past, import and export quotas were important policy measures in Vietnam, with goals to ensure food security, to protect SOEs and regulate prices and incomes of farmers. The quota was determined twice a year based on demand and supply, seasonal conditions and international demand and price (ISG, 2001).

In 1990, several key agricultural products namely rice, tea, coffee were subject to an export quota. Since 1991, however, export quotas have been gradually abolished (Thi Bich Loc Tran, 2002). In 1995, export quota on all agricultural commodities but rice were ceased (Martin, 2001, p.19). The rice quota amount increased over time, e.g. from less than one million metric tons in 1992 to 4.5 million in 1998. In 1999 and 2000, the quota remained rather stable at 3.9 million tons, and 4.3 million tons, respectively. In 2001, the rice export quota was finally abolished, based on Decision No. 46/2001/QD/TTg, and may be only still used in emergency circumstances.

Quantitative restrictions on imports existed for fertilizer, tobacco (Decision No. 405-TM/XNK, dated April 13, 1993), as well as sugar (1998-2002) and vegetable oil (1999-2001). Sugar as well as some types of fertilizer were even subject to temporary import prohibition at some stage.

c. Taxes and tariffs

Agricultural imports are protected by an average tariff rate of 24%. In the latest negotiation to join the WTO, Vietnam committed to lower the average tariff rate to 18%[7].

Also in accordance with the Common Effective Preferential Tariff (CEPT) scheme of the Association of Southeast Asian Nations (ASEAN), there is a commitment to further reduce tariffs on agricultural imports.

Import tariffs have been set at 0% for seeds, breeds, animal furs and skin, and cotton which are inputs for agricultural and industrial production but unavailable in the country. Tariff rates at 1-10% are applied to inputs of the processing industry which cannot be found wholly within the country. Tariff rates at 15-30% are applied to processed products whose competitiveness is high like meat, milk, fresh vegetables and fruit, spice, and semi-processed coffee. The tariff on sugar imports ranges between 30 and 45%. Higher tariff rates (40-50%) are used for processed products whose competitiveness is low like refined vegetable oil, tea, coffee, vegetables, meat and cake, breads. Very high tariff rates of 80-100% concern wine, beer, soft drinks, tobacco products and luxurious goods whose consumption is discouraged. Within

[7] http://www.vnexpress.net/Vietnam/Kinh-doanh/2004/07/3B9D406E/

agriculture, livestock and cereals are subject to lower import tariffs than industrial crops (Nin *et al*., 2003, p. 5).

Table 2: Tariffs on selected agricultural importables

Item	Tariff
Seed and breed, animal furs and skin, and cotton	0%
Rattan, live animals, maize	5%
Paddy, sorghum, millet and other cereals, oil seeds, sugar cane	10%
Meat (fresh or frozen), milk (fresh or skim), cinnamon, ginger, starch	20%
Vegetables (fresh or frozen), fruit, spices (pepper, chilli, garlic, onion), raw sugar	30%
Cooking oil, refined sugar	40%
Processed coffee, tea, sausage and other processed meat, processed vegetables and fruit, cake and candy, flour	50%
Wine and alcohol, cigarettes	100%

Source: Decision No. 1803/QD/BTC dated on December 11, 1998

Regarding the export tax on agricultural products, there has been a gradual removal. According to the Law on Export and Import approved on December 29, 1987 the export tax on rice, peanut, cashew nut, coffee, tea and rubber was 10%. In 1989, export tax rates were reduced to 5% on rice, 4% on rubber and 3% on cashew nut, tea, coffee and pepper (Decision No. 222-TC/CTN, December 29, 1989). By now, most agricultural exportables are free of tax.

Table 3: Development of the rice export tax, 1988-2000

	Document	Rice with 25% of broken and more	Others
2000	193/2000/QD/BTC (5/12/2000)	0%	0%
1998	1336/1998/QD/BTC (05/10/1998)	0%	1%
1998	1233/1998/QD/BTC (16/9/1998)	1.5%	2%
1998	805/1998/QD-BTC (25/6/1998)	0%	1%
1998	103/1998/QD/BTC (6/2/1998)	0%	0%
1996	684 TC/QD/TCT (9/8/1996)	0%	1%
1996	542 TC/QD/TCT (12/6/1996)	1%	1%
1995	QD904TC/TCT/QD (15/08/1995)	2%	2%
1995	QD615 ATC/TCT/QD (10/06/1995)	1%	1%
1993	QD571TC/TCT (3/8/1993)	0%	0%
1992	ND 110-HDBT (31/3/1992)	1%	1%
1989	Decision 222-TC/CTN (29/12/1989)	5%	5%
1988	Import-Export Law	10%	10%

Source: Vietnam Law, available at: www.vietlaw.gov.vn

The taxing of raw exports has been also used for example to promote the processing of cashew nut. Thus, in the last ten years, the country has developed its processing industry and reduced the share of unprocessed cashew nut in total exports impressively.

Jensen and Tarp (2003) looked at the issue of how reduced trade taxes, as a result of a deepening world market integration, affect poverty across different household groups in Vietnam. They conclude that rural areas tend to be harder hit than urban areas, and that farming households are more affected than wage-earning and self-employed households. In addition, they find that rural inhabitants suffer disproportionately from the elimination of import tariffs, while the elimination of export taxes has only minor effects.

Apart from tariffs and taxes, customs surcharges have been applied to unprocessed cashew nut, unprocessed rubber latex and coffee. For the export of unprocessed cashew nut, a customs surcharge of 10% has been applied since 1995 (Decision 05/BVGCP-BOG on January 26, 1995), and 5% for the export of rubber latex since 2001 (Decision 20/2001/QD-BVGCP, dated March 26, 2001).

The main idea of customs surcharges is to finance the Price Stabilization Fund (PSF) and/or to discourage the import or export of certain commodities. The surcharge is calculated based on the difference between domestic market price and the f.o.b. (or c.i.f.) price.

d. Export subsidies

Before 1998, the Vietnamese government did not award any export subsidies to agricultural products (ISG, 2001). In 1998, export subsidies were first provided to canned pineapple, and in addition, an Export Reward Fund (ERF) was established. It provided financial support and preferential loans to enterprises exporting fruits and vegetables as well as meat products. In 1999, the ERF together with the Price Stabilization Fund was transformed into the Export Support Fund (ESF). The purposes of the ESF are (i) to subsidize interest payments relating to agricultural exportables when their international prices decline, (ii) to assist some exportables which face losses due to their weak competitiveness or other reasons, and (iii) to reward exporters who promote new exportables or access new foreign markets or enlarge their exports to foreign markets. According to ISG (2001), the ESF was used to give interest rate support for purchasing rice and pineapple buds as well as exporting certain fruits and vegetables and compensating for losses in export for rice and coffee. Since 2001, also tea export has been promoted out of this fund. In addition, a subsidy for tea export has been granted by some provinces (e.g. Lam-Dong province).

In 2000, the total amount of subsidies provided by the ESF amounted to US$ 9.2 million (Schmidt, 2003). More specifically, the export reward has been stipulated as follows: those enterprises exporting to new foreign markets and whose revenue exceeded US$ 100,000 received a reward amounting to 1% of their export revenue, but not more than VND 150 million. Enterprises with (i) an export revenue increasing by 20% annually or (ii) high-quality exported commodities which were granted medals at international trade fairs, or (iii) enterprises whose inputs were at least 60% domestically produced, would be granted an amount of about VND 50-

100 million. In 2001, the reward policy was changed. The reward is now determined by the annual increase of the export revenue.

In the latest document submitted to the WTO, Vietnam committed itself to cease export subsidies for coffee on the date it joins WTO, and for rice, pork and vegetables in three years after having entered WTO[8].

e. Removing trading licenses

Before 1989, the state held the monopoly position in foreign trade (Circular No. 53-BNG/VP dated October 2, 1982). The Ministry of Foreign Trade established Import and Export Companies, and only these companies were allowed to trade. Major partners were the FSU and CEECs. During 1981-88, foreign trade was decentralized. As a result not only import and export companies which belonged to the Ministry of Foreign Trade were allowed to import and export, but also those belonging to other Ministries or local governments (Thi Mo Nguyen *et al*., 1996).

In 1989, the monopoly of the SOEs was broken. Private trading companies were allowed to engage in trade but their activities were severely impeded because import and export licenses were required. Private companies that produced exportables were allowed to choose state-owned exporting companies as export entrustees while those with annual export revenues above US$ 5 million could apply for export licenses (Circular No. 10-KTDN/XNK dated August 7, 1989). Since 1991, all private companies with licences were allowed to export directly, not through entrustees. In 1998, the licensing requirements for trading were largely abolished, and since 2001, private companies as well as SOEs are allowed to export most products without any licence. In agriculture, export licenses are now applied only to seeds, breeds, and all kinds of insects and import licenses on raw and refined sugar as well as alcohol (Decree 57/1998/ND-CP, dated on July 31, 1998). Nevertheless, the export of important agricultural commodities like rice, coffee, rubber, tea largely remains in the hands of SOEs (Auffret, 2003).

f. Other non-tariff trade barriers

Decree No. 92/CP on November 27, 1993 on plant protection and quarantine and Decree No. 93/CP dated November 27, 1993 on veterinary issues stipulated that harmful plants or animals should be inspected when being imported, exported or transited through the country. However, the implementation of existing regulations on pest and disease control of Vietnam which are said to be in conformity with WTO, has been ineffective (ISG, 2001, p. 19).

In the latest negotiation to join the WTO in June 2004, Vietnam committed itself to implement the SPS agreement on the date of joining the WTO except in three areas, namely harmonization, equivalence, and control, inspection and approval procedures for which it wants a

[8] http://www.vnexpress.net/Vietnam/Kinh-doanh/2004/07/3B9D406E/

transition period of about three years[9]. This is argued on the basis of lacking resources to implement immediately and the complexity of the three issues.

g. Removing exchange rate distortions

Until March 1989, the exchange rate had been fixed, and it served as an accounting measure rather than a policy indicator reflecting economic fundamentals. During the years of super inflation (1986-88), the Vietnamese Dong became overvalued, as indicated by the fact that the official exchange rate was much lower than that prevailing in the parallel market. Hence, from 1989 to 1991, the local currency was depreciated several times based on inflation rates, interest rates, balance of payments stance and the exchange rate in the parallel market. These depreciations increased the competitiveness of Vietnamese goods and improved export and the current account (Tri Thanh Vo *et al*., 2000, pp. x-xi).

Between 1991 and 1997, the exchange rate was kept rather stable by strict controls over the capital account, especially over capital outflows. In 1997, the Vietnamese Dong was depreciated again due to the balance of payments pressures resulting from declined foreign direct investment inflows and export values due to the Asian financial crisis. The exchange rate band was widened from 1% to 5% in February 1997 and to 10% in October 1997. Since February 1999, the exchange rate has been specified daily by the average of inter-bank exchange rates from transactions in the previous days with a narrow band of 0.1% (Ohno, 2003). This makes the exchange rate policy in Vietnam some kind of crawling peg one.

3.3 Trade Agreements

Since 1991, Vietnam has increasingly strengthened its diplomatic relations with other countries in the quest for further integration. Up to now, Vietnam has signed trade agreements with around 76 countries.

Vietnam signed the Bali Treaty of the Association of Southeast Asian Nations (ASEAN) in 1992, and became a full member on July 28, 1995. It also joined Asia-Pacific Economic Cooperation (APEC) in November, 1998. As a member of the ASEAN Free Trade Agreement (AFTA), Vietnam is to achieve a tariff range of 0 to 5 % by 2006 for goods imported from other ASEAN countries and to eliminate non-tariff trade barriers.

A Framework Cooperation Agreement (OJ L 136/28 of 07.06.1996) was signed between the EC and Vietnam in July 1995 and entered into force on 1 June 1996. The Agreement was concluded for an initial five-year duration with a clause providing for an automatic extension on a yearly basis. It especially aims at increasing bilateral trade and investment, support for a sustainable economic development and an improvement of the living conditions of the poor. The

[9] http://www.wto.org/english/news_e/news04_e/acc_vietnam_15june04_e.htm

EU traditionally absorbs about 22% of Vietnam's exports (€ 1.47 billion in 2001) and is the country's largest trading partner. The EU supplies only 12% of Vietnam's imports (EU-website, 2004).

In February 1994, the US lifted their trade embargo against Vietnam which had been in place since the US involvement in the Vietnam war. On 13 July 2000, the US-Vietnamese Trade Agreement was signed, and it became legally effective on 10 December 2001. According to the World Bank, the agreement will increase Vietnam's exports by US$ 1 billion within 4 years (Reuters, 2001). Until the signing of the agreement, Vietnam was one of the few countries on which the US had imposed general tariffs which were generally much higher than the normal trading status tariffs. According to a World Bank study (Fukase and Martin, 1999), the agreement helped to almost double Vietnam's annual exports to the US.

In early 2001, a trade agreement was signed between Vietnam and Pakistan. Furthermore, Vietnamese officials recently completed negotiations with India concerning trade regulations and tariffs.

On 4 November 2002, China and the ASEAN countries signed a Framework Agreement on Comprehensive Economic Cooperation, marking the formal launch of the ASEAN-China Free Trade Area (ACFTA). In a first stage, tariffs will be reduced or eliminated in 2010 for ASEAN-6 and in 2015 for the newer ASEAN countries including Vietnam (Bridges, 2003).

Roland-Holst *et al*. (2002) assess the long-term effects (2000-2020) of Vietnam's deepening integration into the world markets. They conclude that most benefits accrue to Vietnam when it participates in various bilateral, regional and multilateral trade agreements and at the same time allowing for extensive capital market liberalization, promoting FDI and proceeding with the domestic reform process.

4 Estimating Protection in Vietnam

After having described the general situation and policy in the agricultural sector, the estimates of the MPS and PSEs are presented for individual commodities in Vietnam. After a literature review, the methodology and data sources are briefly described. Then, the commodity-specific results on MPS and PSEs in Vietnam are analyzed. Based on this analysis, further research needs are discussed.

The selected agricultural commodities include rice, coffee, tea, rubber, pepper, sugar, groundnut, cashew nut and pig meat. These commodities are the main agricultural products and exportables of Vietnam. Their shares in total output exceed 70% allowing for a generalization of the calculated PSEs, thus roughly presenting the whole agricultural sector.

In order to estimate agricultural producer support, input subsidies and price-based measures, namely export subsidies and taxes, as well as tariff and non-tariff barriers are taken into account. General support is not considered in the quantification of PSEs. The exchange rate used in converting reference prices into the domestic currency is the nominal average rate. This is in accordance with other studies.

Not many studies exist on the analysis of agricultural support in Vietnam. Nominal rates of protection (NPR) and effective rates of protection (EPR) have been calculated for selected agricultural commodities in Vietnam by FAO (Barker *et al*., 1994), GSO (1999) and IFPRI (Barker *et al*., 2001). Barker *et al*. (1994) calculated NPRs for rice and urea, i.e. the main agricultural output and input in Vietnam. In 2001, they expanded their calculations of NPRs also to rubber, coffee, pepper, and tobacco during the 1985-2000 period (Barker *et al*., 2001). The NPRs referred to a comparison of retail and border prices without any adjustments. GSO (1997) calculated EPRs for the year 1996 for 97 items, including 6 agricultural commodities, namely paddy/grain, rubber, coffee, sugarcane, pig, and poultry. A reference to these studies and a comparison of their results with own calculations is incorporated in the respective subchapters for individual commodities.

4.1 Methodology

This study adopts the OECD methodology in calculating PSEs for major agricultural products of Vietnam. A detailed description of the basic methodology has been provided by Mullen *et al*. (2004). In their paper published by IFPRI, they highlight the methodological issues which need to be considered when calculating PSEs, specifically in the context of developing countries.

Assumptions employed in the analysis include competitive markets and a small country (or price taker) in the international market under study. According to the OECD (Portugal, 2002), PSEs imply gross transfers from consumers and taxpayers to agricultural producers. These gross transfers result from different policy actions and are measured as the difference between the farm-gate and the equivalent international price, plus budgetary payments. PSEs can be measured for specific commodities or for the whole agricultural sector. They consist of the following eight components: i) market price support (MPS), and budgetary payments based on ii) output, iii) area planted/animal numbers, iv) historical entitlements, v) input used, vi) input constraints, vii) overall farming income, and viii) miscellaneous payments. Both, MPS and PSEs, can be denoted in monetary terms or as percentage of the agricultural output value and budgetary support.

MPS refers to transfers from consumers and taxpayers to agricultural producers as a result of policy measures that create a gap between border prices and domestic prices. They are measured at the farm-gate level, for a specific agricultural commodity. The comparison of developed and developing countries shows that in the latter MPS is used more often than payment measures (Mullen et al., 2004). This is because of the limited budget of developing countries, which restricts payments.

To compare with the domestic farm-gate price, reference prices are adjusted for costs arising in conveying the commodity from the farm to the port. If the commodity i is an importable, the reference price (P_r) can be taken from the c.i.f. price (P_{cif}) at the port of the country under consideration or the f.o.b. price from the main exporter plus international freight and insurance from the exporter to the home country's port. If commodity i is an exportable, the reference price (P_r) can be deducted from the f.o.b. price (P_{fob}) at the home country's port or the c.i.f. price at the main importer's port minus international freight and insurance to that importer's port. As agricultural exportable and importable are involved with transportation costs, marketing costs and export-import fees during the transition stage from the farm to the port, these c.i.f. and f.o.b. prices should be adjusted in order to be comparable with the farm-gate price:

(1) $$P_{ar} = P_{cif} + C_p + T_{p:w} + M_{p:w} - T_{w:f} - M_{w:f} - Q_{adj}$$ (for importables)

(2) $$P_{ar} = P_{fob} - C_p - T_{p:w} - M_{p:w} - T_{w:f} - M_{w:f} - Q_{adj}$$ (for exportables)

where P_{ar} means adjusted reference prices, C_p denotes port charges and $T_{p:w}$ and $T_{w:f}$ represent transportation and handling costs from the port to the domestic wholesale market and from the wholesale market to the farm. $M_{p:w}$ and $M_{w:f}$, respectively, refer to marketing margins of trading companies from the port to the wholesale market and from the wholesale market to the farm. Q_{adj} means the unit price difference between an exportable (or importable) and the equivalent domestically consumed commodity due to a quality difference. In developing countries, these adjustments may be quite significant. Transportation costs and marketing margin

are high because of poor quality infrastructure. The quality difference may be great since better quality products are likely to be chosen for export, and importables may have better quality than domestic products due to the lower level of domestic technology.

In monetary term, MPS of an agricultural commodity i equals:

(3) $$MPS^i = (P_d^i - P_{ar}^i) \cdot Q^i$$

where P_{ar}, P_d and Q represent the adjusted reference price, farm-gate price and quantity produced of the agricultural commodity i.

In relative form to the value of output at adjusted international prices, MPS is equal to:

(4) $$\%MPS^i = \frac{(P_d^i - P_{ar}^i) \cdot Q^i}{P_{ar}^i \cdot Q^i}$$

Having calculated the MPS for individual commodities, it is necessary to extrapolate for the whole agricultural sector to provide an overall measure. Ideally, if MPS is computed for all agricultural commodities, the nominal MPS of the agricultural sector will be equal to the sum of all nominal MPS calculated. Normally, due to limited resources, the MPS is calculated only for the most important commodities. The nominal MPS of included commodities will be extrapolated to the whole agricultural sector in one of the two following ways:

1. Summing up the nominal MPS of the included commodities. This is symbolized by MPS_c. It is assumed that the MPS for the excluded commodities is zero. This makes sense as commodities subject to policy intervention are usually selected first for the analysis and calculation of MPS.

2. "Scaling up" nominal MPS for the whole agricultural sector, which is called MPS, by using the output share of the included commodities in total agricultural production. It is assumed that the protection of the included commodities is comparable to that of the excluded commodities. To reduce errors in this scaling-up stage, it is suggested that the total value of included commodities should cover at least 70% of the total agricultural production value (Portugal, 2002, p. 17).

Based on the nominal MPS for the whole agricultural sector, the nominal PSE can be obtained by summing up the nominal MPS and the budgetary payments. Corresponding to the way of estimating the nominal MPS for the agricultural sector, the nominal PSE can be the sum of the budgetary payments and total MPS of the included commodities, PSE_c, or the sum of the budgetary payments and the scaled up value of total MPS of the included commodities, PSE (see Mullen *et al*. (2004) for further discussion).

In general, PSE is estimated for the agricultural sector. In cases the budgetary payments can be separated for individual agricultural commodities, PSE can be estimated for individual commodities.

Algebraically, PSEs can be measured as:

(5) $PSE_c = MPS_c + PP$; $PSE = MPS + PP$

(6) $$\%PSE_c = \frac{PSE_c}{P_d \cdot Q + PP} \cdot 100 \quad ; \quad \%PSE = \frac{PSE}{P_d \cdot Q + PP} \cdot 100$$

where PP implies budgetary payments and subsidies to agricultural producers (Portugal, 2002). The %PSE is usually measured, with domestic prices in the denominator, as shown in equation (6).

Since the %PSE above contains the agricultural production value measured with the farm price, it gives higher (lower) weights for protected (disprotected) commodities in the denominator (Pursell and Gupta, 1997). Methodologically, this downward (upward) bias in the %PSE can be overcome by valuing agricultural output at farm-equivalent international prices which Mullen *et al.* (2004) call the trade economist approach. Difficulties and measurement errors in valuing agricultural output at farm-equivalent international prices make this approach used less frequently.

In large developing countries, a regional analysis may be relevant. This is the case when policies may result in the protection of one region and disprotection of another. For instance, an export subsidy policy may give support to farmers in the region near the port, while farmers in the region far from the port may not benefit if domestic trade limitation hinders their products to be exported. In another case, when a region has a surplus of an agricultural commodity but another region has a deficit, farm prices in the deficit region will have to be compared either with the adjusted c.i.f. price or with the adjusted price of that commodity from the surplus region, depending on which price is lower. In case of Indian wheat, e.g. the farm price in the deficit region was compared with the adjusted price from the surplus region (Pursell and Gupta, 1997). If policy ensures that domestic markets are well integrated, the regional price difference will merely reflect transportation and marketing costs between regions under investigation.

A farm-gate price can depict an annual average as in case of the OECD studies or an average price during the seasons when most agricultural harvesting takes place (Pursell and Gupta, 1997, p. xii). The average price of agricultural commodities during harvest time, in case it is available, will give more accurate results than the annual average price because the latter not only reflects the value of the product but also includes storage costs.

Another issue of concern in calculating PSEs is the use of the exchange rate. The exchange rate is exerted in converting the border (reference) price into local currency to be comparable with the farm price. Most studies utilize the nominal exchange rate. This is because of the computational convenience and this holds true when the nominal exchange rate is correctly specified. In case that the exchange rate is misaligned which has characterised some developing countries using the nominal exchange rate may give results for those conditions. But the nominal exchange rate in that case does not reflect the competitiveness of tradable goods. One way to overcome this is to use of the real (inflation-adjusted) exchange rate or purchasing power parity (PPP) exchange rate. Alternatively, an equilibrium exchange rate can be calculated (Cheng and Orden, 2004).

4.2 Data Sources

Regarding our calculation of MPS for specific commodities, border prices are unit values of exports or imports of agricultural products. These are computed from annual export values and export volumes of individual agricultural commodities taken from FAO database.

Domestic prices of agricultural commodities are producer (or farm) prices, taken from the Department of Trade and Prices of the General Statistic Office of Vietnam for the 1986-2003 period. Domestic prices are annual average prices.

Data on production output of paddy rice, coffee, tea, groundnut, rubber, pepper, sugarcane, and cotton are from the *Statistical Yearbook* of the General Statistic Office of Vietnam (various years), of cashew nut from the Institute for Agricultural Economics and of pig meat from the FAO database. Data on agricultural value is also from the *Statistical Yearbook* of the General Statistic Office of Vietnam (various years).

Transportation costs, port charges and marketing margins of import and/or export enterprises as well as the quality difference between domestically produced commodities and corresponding exportables or importables are derived from various existing studies. For example, adjustments of prices for rice and sugar have been made based on study results by Xuan Nguyen Nguyen *et al*. (1995), Trung Que Nguyen *et al*. (1997) and Khiem *et al*. (1996). Quality adjustments for rice have been made especially based on information from Goletti *et al*. (1997). Data on the quality of exported rice is provided by the Ministry of Trade each year, while the information on the quality of domestically consumed rice for the year 2000 is based on a study of the Institute for Agricultural Economics (2001). More details on data sources are given in the subsections for the individual commodities. A detailed overview of the adjustment factors and their respective sources are given in Appendix Table 3. Exchange rates are annual average rates obtained from the *International Financial Statistics 2003* (IMF).

Budgetary payments include basically input subsidies like (i) irrigation fee, (ii) seed subsidy, (iii) electricity used in agricultural production, (iv) fertilizer subsidy and (v) credit

subsidy. Irrigation fee is taken from the Department of Irrigation while information on the seed subsidy is from the Department of Agriculture of the Ministry of Agriculture and Rural Development (MARD). Electricity used in agricultural production is provided by the Institute of Energy (Electricity of Vietnam). Fertilizer subsidy is calculated based on the amount of fertilizer utilized taken from the GSO and the difference between the adjusted border price and retail price of fertilizer gathered from the GSO and Informatic Center for Agriculture and Rural Development of MARD. The credit subsidy is computed using data on credit of the Bank for the Poor.

There are three problems encountered in calculating input subsidies. First, electricity subsidy is computed by the amount of electricity provided for agriculture multiplied by the difference between the prices charged from the agricultural and the industrial sectors. This provides a rough estimation of subsidies provided to farmers as compared with enterprises. Ideally, the electricity subsidy must be the difference between the price charged to the agricultural sector and the price fully reflecting depreciation and operational costs in the electricity sector. Second, fertilizer subsidy is calculated by the product of the fertilizer quantity and the gap between the retail price in the Vietnamese market and the adjusted c.i.f price of urea. The quantity of fertilizer is the sum of imported fertilizer and domestically produced fertilizer quantities, and it is assumed that annual changes in stock are minor or negligible. In addition, the price gap is measured for urea, while the quantity of fertilizer is the sum of quantities of different kinds of fertilizer. Hence, it is supposed that the price gap of urea also holds with other kinds of fertilizer. Third, credit subsidy includes credits of the Bank for the Poor and does not take into account the preferential credit to minorities of the Bank for Agriculture and Rural Development. It is assumed that this may not change the result significantly, as the amount of lending to minorities is small and subsidies were just 30% of the normal rates.

4.3 Market Price Support for Major Agricultural Commodities

Based on the above mentioned methodology, the protection is calculated for the individual major agricultural commodities in the following subsections. The estimation of the adjusted reference prices for the individual commodities is generally based on equations (1) and (2), while the %MPS calculation derives from equation (4).

a. Rice

To calculate the %MPS for rice, paddy prices (P_f) are first converted into rice prices (P_d) and then compared with the adjusted reference prices. According to Xuan Nguyen Nguyen et al. (1995), the paddy price accounts for 73.5% of the milled price. The conversion factor is 1.43 (=1/0.7) as each kilogram of paddy gives 0.7 kilogram of rice. The price of the rice, P_d, converted from the paddy price, P_f, can be thus calculated as:

$$P_d = (P_f / 0.735) \cdot 1.43$$

In order to obtain the adjusted reference price of rice, the export price of rice is first adjusted to the quality difference between the exported and domestically consumed rice, and then to the transportation and handling costs as well as to the marketing margin of the exporting company.

Quality adjustment

An adjustment with respect to the quality difference is necessary in order to compare domestic with adjusted export prices. Since the quality of domestically consumed and exported rice changes over time, a quality index is needed which can then be used to weigh the respective domestic and export prices.

For domestically consumed rice, the Institute for Agricultural Economics (IAE, 2001) calculated an average quality index, based on their own survey results. For the year 2000, this index amounts to 1.68 (Table 4).

For the exported rice, a quality index has to be constructed, as will be described step by step in the following: first, it is known that domestically consumed rice in Vietnam is categorized in three groups:

(i) high quality rice (less than 10% broken; short time of storage; fragrant rice);
(ii) medium quality rice (above 10% broken); and
(iii) low quality (very high percentage of broken rice, moldy, long storage time).

According to international standards, however, rice is categorized in the following three groups:

(a) high quality rice (with no more than 10% broken),
(b) medium quality (15-20% broken), and
(c) low quality (more than 20% broken).

Thus, the Vietnamese medium quality domestic rice (ii) corresponds most closely to the category of low quality exported rice (c).

Second, the Institute for Agricultural Economics (IAE, 2001) has assigned a factor of 1 to the low quality domestic rice (iii), 1.4 to the medium quality rice (ii) and 2.9 to the high quality domestic rice (i). Hence, a factor of 1.4 is attached to the low quality export rice (c). However, also the factors for the other two export quality categories (a,b) are needed to calculate the quality index for exported rice.

Since it is known that the price of high quality export rice is 35% higher (=1.35) and that of medium quality export rice is 25% (=1.25) higher than the price of low quality export rice, the factors for these respective export rice categories can be calculated by multiplying the price

difference with the factor 1.4. Hence, for the high and medium quality export rice, the factors 1.89 (i.e. 1.35 · 1.4), and 1.75 (i.e. 1.25 · 1.4), respectively are derived. By multiplying these factors with the amounts of different shares of export rice qualities, as represented in Table 4, a quality index of 1.73 for exported rice has been calculated.

Table 4: Quality of rice in Vietnam in 2000

	Share in total of each category	Quality index of each category	Quality index of total
Domestic rice			**1.68**
Exported rice			**1.73**
By quality category (based on % of broken rice)			
• 10% and less broken	49	1.89	0.93
• 15-20%	26	1.75	0.45
• more than 20%	25	1.4	0.35

Sources: IAE (2001), Institute for Trade Research (2001) and own calculation.

Dividing the quality index of exported rice in 2000 by the quality index of domestically consumed rice in the corresponding year gives the rate of 1.03. This means that the quality of exported rice is 3% higher than the quality of domestically consumed rice. It is assumed that this quality difference holds for the whole 1986-2002 period.

Adjustment for other factors

The adjustment for the handling costs and the marketing margin of rice exports is based on Xuan Nguyen Nguyen *et al*. (1995). They estimate the port charges, transportation and handling costs from the exporting companies to the port to be 9.3% of the export price, and the marketing margins of the exporting companies to be 9.8%. This assumption on the marketing margin is supported by other studies: Khiem *et al*. (1996) as quoted in Young *et al*. (2002, p. 20), estimate packaging costs of rice exporters in the Mekong Delta to account for about 3%, while profits of exporting companies are 5.6% of the export price. According to Trung Que Nguyen *et al*. (1997) advertisement and trade fair costs range from 0.1% to 1.5% of the export price. Hence, based on this, the total marketing margin is within 8.7-10.1% of the export price. Using the estimates of Xuan Nguyen Nguyen *et al*. (1995), the adjusted reference price calculated in the following equation (2) is:

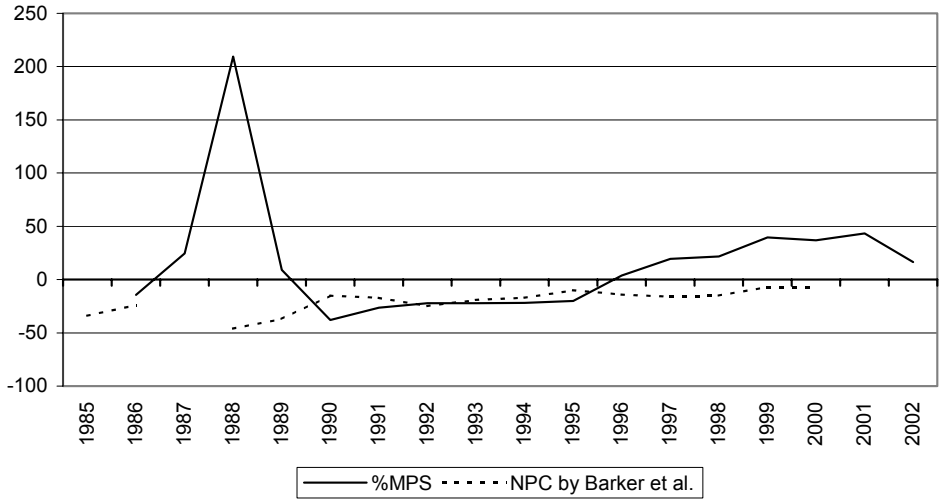
$$P_{ar} = P_r \cdot (1 - 0.093 - 0.098) - 0.03 \cdot P_r \cdot (1 - 0.093 - 0.098)$$

The %MPS for rice in Vietnam shows that rice farmers have been protected especially at the end of the eighties and after 1996, while from 1990 to the mid-nineties, they were taxed (Figure 11). At the beginning of the reform process, between 1987 and 1989, the extremely positive %MPS was due to super inflation and an overvalued exchange rate. Super inflation resulted in high domestic prices for rice. At the same time, export prices were low when being

converted into the local currency, due to an overvalued exchange rate (see subsection 3.2g). As such, there is a great and positive gap between farm and adjusted reference prices, and the resulting positive and significant %MPS. This outcome holds for other commodities as well. The negative %MPS in the early 1990s, can be attributed to the small exporting quota. During these years, the annual export quota of rice was kept at a low level, being not more than two million tons. The small quota made rice more abundant in domestic markets and lowered its domestic price.

Due to the liberalization of the rice market and the minimum price policy launched in 1993, the producer prices rose in all regions but especially in the south where the implicit tax of the export quota had mostly depressed prices. This trend was further increased by public stockholding and the increased export quota. These policies increase the demand for rice thus pushing up domestic prices. As a matter of fact, the significant increase in the export volume since 1996 correlates well with the sharp increase in the domestic price. On the other hand, the lack of competition in the allocation of the export quota and the export subsidy policy might contribute to the fact that STEs maintained low export prices. The %MPS for rice keeps increasing and becomes positive since the mid 1990s.

Figure 11: MPS and NPC for rice, 1985-2002



Source: Barker *et al*. (2001) and own calculations.

Our estimates are supported by the results of a study by GSO (1999). They calculated an effective rate of protection of 0.127 for 1996, indicating a slight protection of rice farmers in that year. Similarly, Barker *et al*. (1994) found that the retail price of rice was about 10% lower than the Hochiminh f.o.b prices at the beginning of the 1990s. Their estimated ratios of retail prices to

Hochiminh f.o.b. prices were 0.94 (1991) and 0.86 (1992), respectively. According to them, the gap can be mainly attributed to the monopoly position of public trading firms.

In 2001, results from an IFPRI study by Barker *et al*. (2001) also indicated negative nominal and effective protection rates for major agricultural products including rice. They showed that rice was disprotected during the 1985-2000 period while our estimates indicate an increase in protection since 1996.

Similarly, Manh Hai Nguyen and Heidhues (2004) report that Vietnamese rice farmers are taxed by about 8%, as their nominal protection coefficient for rice is 0.919 in 1998. Their result derived from a comparison between the domestic price of rice in Angiang province and the social price of rice in 1999. Since Angiang is the largest rice producing province, and the second largest rice-exporting province, the data of Angiang can well represent the prevailing price in the country. However, internal adjustments between exported and domestically consumed rice are not incorporated in their calculations. Similarly, if we compare domestic and border prices, we also find disprotection until 1999.

Opposed to our own estimates, all these studies do not take into account the quality difference of exported and domestically consumed rice, transportation costs and marketing margins of trading companies. This comparison implies that the quality difference and internal adjustments are important for the calculation and interpretation of the rice %MPS. Ignoring these factors in developing countries may lead to misleading results.

b. Coffee

Before 1990, coffee export prices were fixed for several years, and did not follow the international market price. Export prices did not encourage coffee planting, they even discouraged it (Thi Bich Loc Tran, 2002, p. 64). Since 1991, export prices have been specified on the basis of international prices.

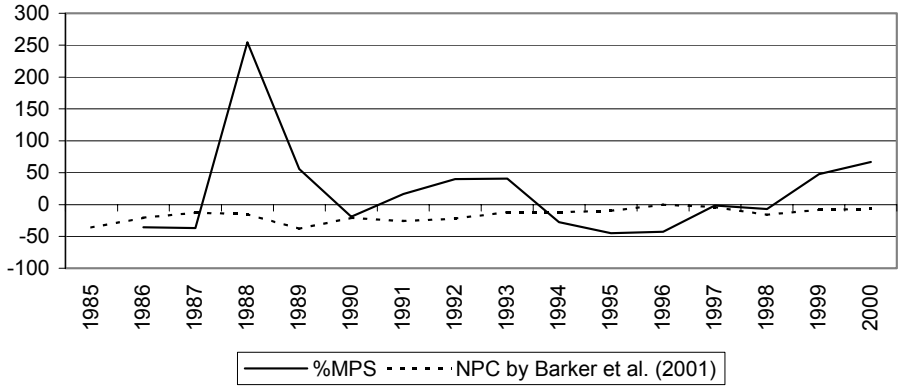
The %MPS for coffee is calculated by using farm prices and border prices. Farm prices are annual averages, provided by the GSO. 80% of coffee export is processed (shelled) by farmers. Private assemblers sort and transport the coffee, and then sell it to exporting companies. The remaining 20% of the coffee is processed and then exported by exporting companies. Trung Que Nguyen et al. (1997) found that transportation and sorting costs, as well as profits of private assemblers account for 30% of the selling prices, while an exporting company earns a profit of 4% of the export prices, and spends 10% of the f.o.b. prices on packaging, handling, transportation, and marketing costs. The adjusted reference price of coffee is thus equal to:

$$P_{ar} = (1 - 0.04 - 0.1) \cdot P_r \cdot (1 - 0.3)$$

The coffee %MPS shows that coffee farmers were protected between 1991 and 1993, disprotected during 1994-98, and protected again in 1999 and 2000 (Figure 12). Liberalisation of coffee trade between 1991 and 1993 resulted in higher domestic prices as compared to adjusted reference prices. Before 1990, there were three exporters, all belonging to the Coffee Export Corporation and they exported coffee mainly to Russia and Eastern European countries. In the early 1990s, many companies competed in buying and exporting coffee pushing domestic prices for coffee up sharply. In response to this competition, the government launched the focal exporter policy for 1994-1998: those members of the Coffee and Cacao Association whose annual export volume was above 200 tons were accepted as focal exporters and could export without any quantitative restrictions. This policy gave market power to focal exporters and led to lower farm prices and disprotection over farmers during 1994-98. The positive %MPS in 1999 and 2000 may be the result of the export promotion policy, namely export rewards and credit support for coffee exports, and the public stockholding policy (in Decision 1067/QD-TTg dated October 27, 2000, Document on January 11, 2001).

This result differs from Barker et al. (2001) where coffee is considered to be systematically disprotected as domestic retail prices of coffee are systematically lower than exporting prices. The difference between our estimations and Barker's et al. results highlights the role of internal adjustment made to the border price.

Figure 12: MPS and NPC for coffee, 1985-2000



Source: Barker *et al*. (2001) and own calculations.

According to GSO (1999), the effective rate of protection for coffee in 1996 is 0.683. Coffee is effectively protected as production inputs are taken into account. As a matter of fact, coffee production has been supported by credit and fertilizer subsidies. These input subsidies have not been captured in the %MPS estimation for coffee and therefore generated a gap between our results and those by GSO.

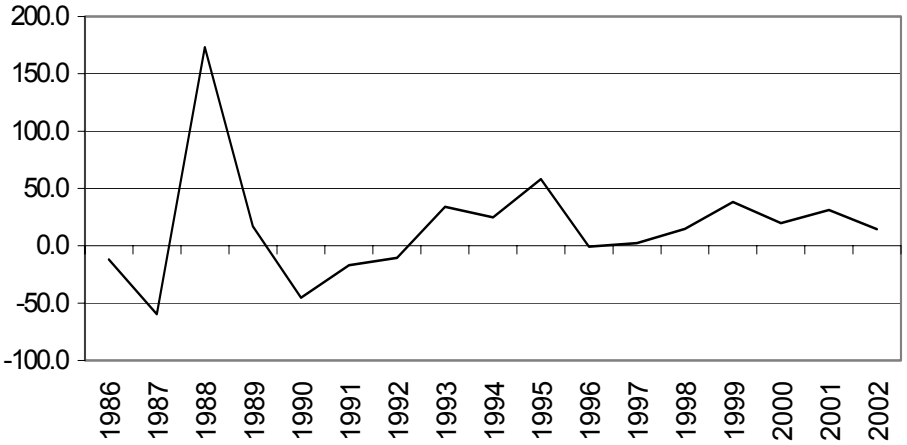
c. Tea

Farm prices for tea are equivalent to the prices of dried buds of tea which are mainly used for export. Hence, the MPS can be measured by adjusting the reference price for the transportation and marketing costs of exporting companies. According to Le Van Dien (1990), transportation costs were 3.6%, and the profit amounted to 0.5% of export prices. The adjusted reference price is:

$$P_{ar} = P_r \cdot (1 - 0.036 - 0.005)$$

The tea %MPS is significantly positive in 1988, during 1993-95 and 1999-2001 (Figure 13). In 1988, super inflation and an overvalued exchange rate resulted - after being converted into the Vietnamese Dong - in international tea prices which were much lower than the domestic price. Between 1993-1995, tea was mainly exported by the Vietnam Tea Corporation (VINATEA). The limited marketing capability of VINATEA which stemmed largely from its monopoly position resulted in low export prices. Although there have been no constraints on tea export since 1991, private companies started to participate in the tea exporting business only recently. During 1999-2001, export rewards and local export support policies may have been the reason for the lower adjusted reference price as compared with the domestic producer price.

Figure 13: MPS for tea, 1986-2002



Source: Own calculations.

d. Cashew nut

Farm prices and unit values of cashew nut exports are used for the MPS calculation. Since farm prices represent prices of unprocessed cashew nut, the unit values need to be converted into unprocessed cashew nut. For this calculation, the following information is to be

taken into account: first, every five kilograms of unprocessed cashew nut give one kilogram of processed cashew nut. Second, the processing costs and marketing costs account for 23% of unprocessed cashew nut costs and export profits are 26% of unprocessed cashew nut costs (Trung Que Nguyen *et al*., 2002). And third, Vietnam exports both unprocessed and processed cashew nuts and their shares in export volume changed considerably over time. Specifically, during 1990-92, unprocessed and processed cashew nut accounted for 90% and 10% of the export volume, respectively. Hence, the unit value of one kilogram of unprocessed cashew nut is computed from the following equation:

$$P_r = 0.9 \cdot P_{unprocess} + 0.1 \cdot P_{process} = 0.9 \cdot P_{unprocess} + 0.1 \cdot 5 \cdot 1.49 \cdot P_{unprocess} = 1.645 \cdot P_{unprocess}$$

Between 1993 and 1995, processed and unprocessed cashew nut accounted for 50% of export volume each. The unit value of one kilogram of unprocessed cashew nut export, $P_{unprocess}$, is derived from:

$$P_r = 0.5 \cdot P_{unprocess} + 0.5 \cdot P_{process} = 0.5 \cdot P_{unprocess} + 0.5 \cdot 5 \cdot 1.49 \cdot P_{unprocess} = 4.225 \cdot P_{unprocess}$$

From 1996 to 2002, 90% of cashew nut exports were processed and only 10% were unprocessed. The unit value of unprocessed export is derived from the following equation:

$$P_r = 0.1 \cdot P_{unprocess} + 0.9 \cdot P_{process} = 0.1 \cdot P_{unprocess} + 0.9 \cdot 5 \cdot 1.49 \cdot P_{unprocess} = 6.805 \cdot P_{unprocess}$$

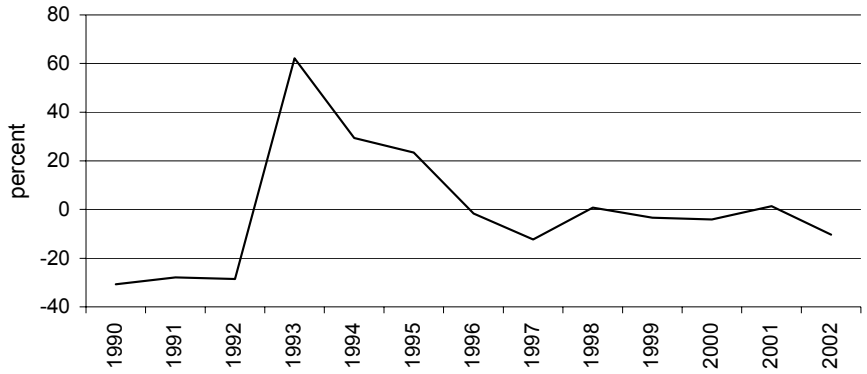
Having unit values of unprocessed exports, adjustment for transportation from the farm to processing and exporting companies is needed. According to Trung Que Nguyen *et al*. (2002), transportation costs and marketing margins of private assemblers who mainly transport unprocessed cashew nut from the farm to processing and exporting companies, amount to 0.8% of the selling price. The reference price of unprocessed cashew nut at the farm gate level therefore equals:

$$P_{ar} = (1 - 0.008) \cdot P_{unprocess}$$

Using this reference price for comparison with farm prices, the %MPS for unprocessed cashew nut shows relatively strong fluctuations since 1990 (Figure 14). Between 1990 and 1992, there was disprotection over farmers growing cashew nut, beyond the export tax of 3-4% on cashew nut. The disprotection is due to different reasons. Before the Land Law of 1993, the long term using right of land was not accepted, the plantation of cashew nut was in small scale and dispersed. STEs kept monopoly positions in trading and did not regard cashew nut as an important exportable. The limited volume of export orders found by STEs lowered the farm price of cashew nut. In 1993-95, the farmers were protected. In this time period, many processing factories came into operation raising the demand for (and price of) unprocessed cashew nut from farmers (IAPP, 1997). This fact favours farmers at the expense of traders. In addition, given low export prices, the processing and trading companies were sustainable partly due to tax exemption applied to companies just coming into operation (Circular No. 128/2003/TT-BTC on December 22, 2003). This subsidy is not included in the calculations, but allowed the gap between the farm

and adjusted reference prices to increase. Since 1996, there is neither protection nor disprotection over farmers. This seems to fit to the fact that cashew nut has not been subject to much policy intervention due to its remaining small, though recently increasing, share in total agricultural export revenue.

Figure 14: MPS for cashew nut, 1990-2002



Source: Own calculations.

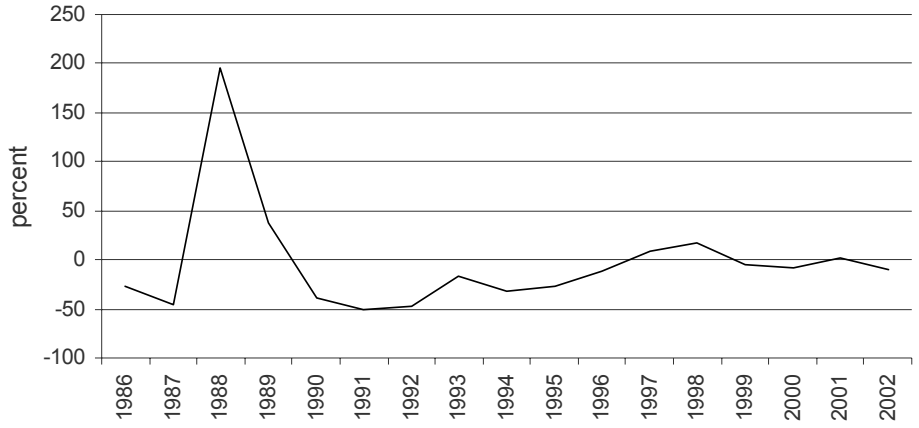
e. Groundnut

The %MPS for groundnut is based on farm prices and adjusted unit values of groundnut export. Farm prices are prices of unshelled nut, provided by GSO. Private assemblers buy unshelled groundnut of farmers and sell it to processing entities. Processing entities husk, classify and pack the groundnut and sell it to exporting companies. According to Trung Que Nguyen *et al*. (1997), private assemblers pay 1.5% of the selling price for transportation costs, and receive a profit of 0.9% of their selling price. Processors pay 2% of total revenue for operation costs and earn 1% of total revenue as their profit. Shelled groundnut accounts for 89% of total revenue (the remaining 11% are by-products). It also has to be known that one kilogram of unshelled groundnut just gives about 0.7 kilogram of shelled groundnut. Exporting companies pay 8.5% of exporting prices for transportation, operation and marketing and get 2.5% of exporting prices as their profit. The adjusted reference price at the farm-gate level is:

$$P_{ar} = (P_r \cdot (1 - 0.085 - 0.025) / 0.89) \cdot (1 - 0.01 - 0.02) \cdot 0.7 \cdot (1 - 0.015 - 0.009)$$

After a decrease in disprotection in the 1990s, the recent %MPS for groundnut does not display a clear trend (Figure 15). Only since 1997 has the %MPS turned out to be positive, but the magnitude of it is small. Hence, it does not seem likely that groundnut is protected even between 1997 and 2001. Similar to cashew nut, export of groundnut has not received much policy attention due to its small share in total agricultural export revenue. According to Thi Nhieu Nguyen *et al*. (1994), export of groundnut is mainly to provide employment and income for farmers.

Figure 15: MPS for shelled groundnut, 1986-2002



Source: Own calculation

f. Rubber

Farm prices are prices for dry latex rubber which is also the main rubber exported from Vietnam. To calculate the %MPS for rubber, adjustments for the quality difference, transportation and profits of rubber-exporting companies have to be taken into account. According to Trung Que Nguyen *et al*. (1997), rubber-exporting companies earn a profit of 0.3% of export prices and pay 5.9% of the export price for transportation and marketing costs in 1996. The adjusted reference price of rubber export is therefore:

$$P_{ar} = P_r \cdot (1 - 0.059 - 0.003)$$

As the farm price for rubber is only available since 1996, the rubber %MPS is estimated for the 1996-2002 period. Since 1994, importers demand low quality rubber (CSV10 and CSV20) for producing automobile wheels while demand for high quality rubber has been very limited. Hence, even some high quality rubber (CSV5 and CSV5L) has been sold at a low price. The domestic wholesale price is the average price for rubber in Vietnam. To calculate the rubber %MPS, we convert the average wholesale price for rubber, $P_{d\ ave}$, to the wholesale price for low quality rubber, P_d. According to Ngoc Anh Nguyen *et al*. (1995), in 1994, the low quality rubber accounted for 5% of the total rubber output, and the price of high quality rubber is 20% higher than the price of low quality rubber. The average wholesale price of rubber is:

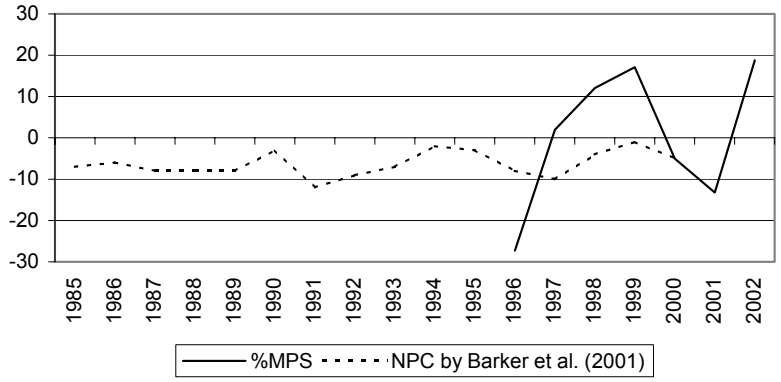
$$P_{d\ ave} = 0.95 \cdot P_d \cdot (1 + 0.2) + 0.05 \cdot P_d = 1.19 \cdot P_d$$

or

$$P_d = P_{d\ ave}/1.19 = 0.84 \cdot P_{d\ ave} = (1 - 0.16) \cdot P_{d\ ave}$$

The %MPS for dried latex rubber, as shown in Figure 16, slightly fluctuated during 1996-2002 but is still marginally different from zero. While there was no political intervention in the rubber market, the fluctuations can be mainly explained by price developments. Since 1997, international prices of rubber have declined quickly and continuously. Though domestic prices (retail and farmer prices) developed in a similar trend as international prices, they decreased more slowly. This fact results in a lower value of adjusted reference prices compared with farmer prices.

Figure 16: MPS and NPC for rubber, 1985-2002



Source: Barker *et al*. (2001) and own calculations.

According to Barker *et al*. (2001), NPRs for rubber are negative for the 1985-2000 period based on a comparison between retail and export prices. Similarly in the study by GSO (1999), rubber is slightly disprotected after input subsidies are taken into account. The effective rate of protection calculated for rubber is –0.027 (1996).

g. Pepper

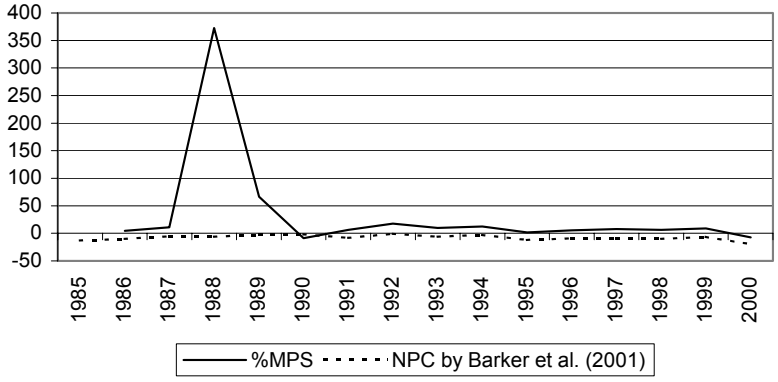
In calculating the %MPS for pepper, farm prices and unit values of pepper export are utilized. Based on the study by Trung Que Nguyen *et al*. (2002), exporting companies earn a profit of 1.06% and spend 5.3% of the exporting price for transportation, packaging and marketing costs. The middlemen who buy pepper from farmers and sell it to exporting companies receive 11.4% of their selling prices. This gap covers their transportation costs from farm to exporting companies and their profit. About 70% of farmers sell pepper to the middlemen and the rest basically sells to exporting companies. The adjusted reference price is equal to:

$$P_{ar} = P_r \cdot (1 - 0.011 - 0.053) \cdot (1 - 0.114) \cdot 0.7 + P_r \cdot (1 - 0.011 - 0.053) \cdot 0.3$$
$$= P_r \cdot (1 - 0.011 - 0.053) \cdot [(1 - 0.114) \cdot 0.7 + 0.3]$$

The %MPS for pepper is marginally different from zero during 1990s (Figure 17). This result reflects the fact that there has been no policy support regarding pepper export from Vietnam. The adjusted reference price differs marginally from the farm price.

In Barker *et al*. (2001), the nominal rate of protection for pepper was negative between 1990 and 2000 (Figure 17). Retail prices are slightly lower than border prices. The price gap can be attributed to transportation costs and marketing margin of exporting companies.

Figure 17: MPS and NPC for pepper, 1985-2000



Source: Barker et al. (2001) and own calculations.

h. Sugar

In calculating the %MPS for sugar, cane prices are converted first into sugar prices and then compared with the adjusted border prices. The border price of sugar is the unit value of sugar import taken from FAO database. Based on Xuan Nguyen Nguyen *et al*. (1995), the loading fee at the port is 1% of the c.i.f. price, transportation costs from the port to the wholesale market account for 2%, and profits of the importers are 3 % of the port price. The adjusted reference price to the wholesale market is:

$$P_{ar} = P_r \cdot (1 + 0.01) \cdot (1 + 0.02 + 0.03)$$

The domestic prices of sugar are converted from sugarcane prices. In refineries, processing costs account for 56.2% of total revenue, and profit is 3.6% of selling prices. The conversion rate factor is 9.74 (180,000 tons of sugarcane were used to produce 18,477 tons of sugar in 1994). Hence, the producer price of sugar is:

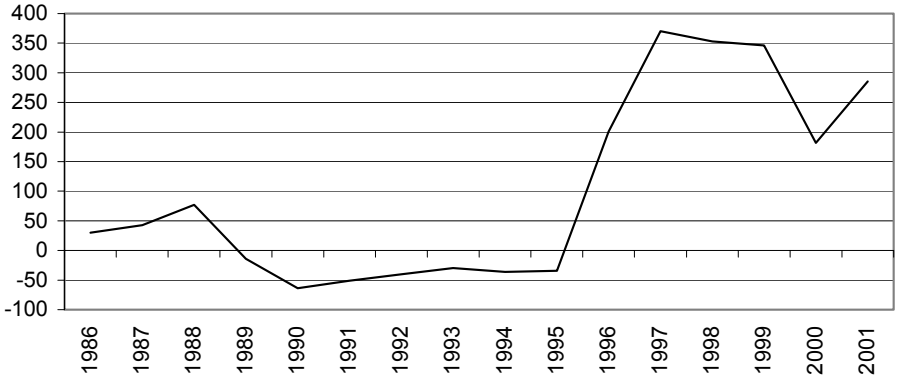
$$P_d = P_f \cdot 9.74 / (1 - 0.562 - 0.036)$$

The adjusted reference price is compared with the producer price. The sugar %MPS, as presented in Figure 18, is positive and high since 1996, reflecting the protective policies over

domestic production following the one-million-ton sugar program. In 1999-2001, an increase in domestic production and smuggling reduced domestic sugar prices.

The protection over sugar is confirmed by GSO (1999). In GSO (1999), the effective rate of protection over sugar was 1.65 in 1996. The result is rather similar to our estimation for sugar in 1996.

Figure 18: MPS for sugar, 1986-2001



Source: Own calculations.

i. Pig meat

The pig meat %MPS calculation is conducted using farm prices and unit values of pig meat exports. The farm price is live weight price. Since pig meat export is mainly carcass, and canned meat and lean meat export accounts for a small share in total pig meat export, we conduct quality adjustment just for carcass. In general, pig meat export has a higher percentage of lean meat than pig meat consumed in the Vietnamese market. Specifically, the percentage of lean meat in the Vietnamese market is about 25% of pig meat, while the percentage of lean meat in pig meat export is 30-35%. The live weigh price of pig meat sold in the Vietnamese market is VND 13,000-14,000 per kilogram while for pig meat export is VND 16,000 per kilogram. The quality adjustment is therefore 16% (= (16,000 - 13,500) · 100 / 16,000).

Farm prices are prices of fresh meat, while exported pig meat is usually processed. Therefore, apart from adjustment for transportation and marketing costs from farmers to processing and exporting companies and from these companies to the port, adjustment for processing costs is also needed in order to be able to compare farm and export prices.

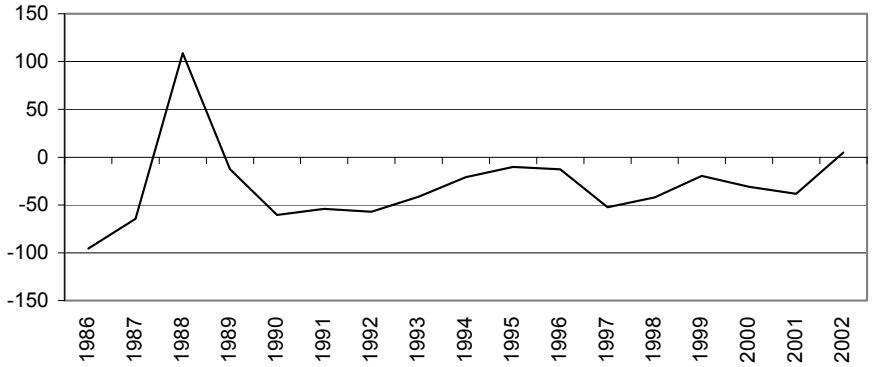
According to Trung Que Nguyen *et al*. (1997), processing and transportation costs from processing and exporting companies to the port account for 18.8% of pig meat export prices, and

their profits are about 0.7%. Transportation from farmers to the exporting companies is about 2% of the export price. Hence, the adjusted reference price of pig meat export is:

$$P_{ar} = P_r \cdot (1 - 0.188 - 0.007 - 0.02) \cdot (1-0.16)$$

The negative %MPS calculated shows the disprotection over farmers who raise pigs (Figure 19). Given the subsidy to pig meat export since 1998, the high adjusted reference price compared with the farm price might be explained by the dominance of state-owned processing companies in pig meat export. As mentioned above, private slaughterhouses are prevented from exporting because of veterinary and SPS requirements. A limited number of state-owned processing and exporting companies give them a monopoly position and allows them sustain the gap between domestic and border prices.

Figure 19: MPS for pig meat, 1986-2002



Source: Own calculations.

The disprotection over pig meat is supported by GSO (1999). In GSO (1999), the effective rate of protection is -0.106 for 1996. The pig meat %MPS calculated for the year 1996 is –12.8 which is more or less similar to the effective rate of protection for that year. This reflects the fact that input subsidies in raising pigs are negligible.

4.4 PSE estimation

PSE is estimated for rice and the whole agricultural sector. The reason for not computing PSE for other agricultural commodities is because of the impossibility to allocate budgetary payments, namely credit, electricity and fertilizer subsidies, across agricultural products.

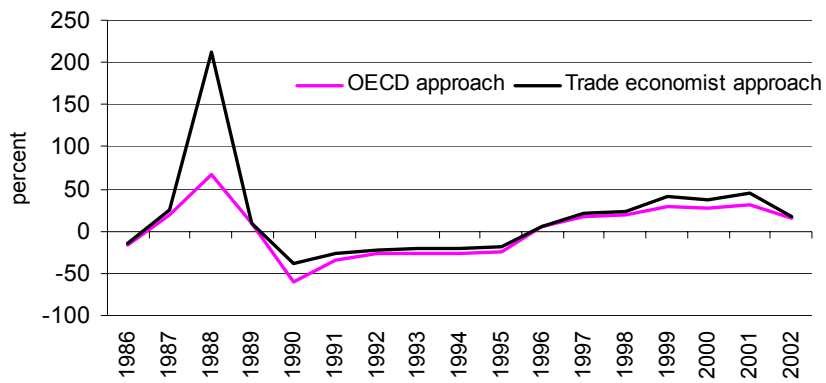
Estimation of the nominal PSE is based on equation (5) while that of the %PSE is based on equation (6) mentioned in section 4.1.

a. PSE for Rice

In order to calculate the %PSE for rice, estimation of budgetary payments for rice is needed. Budgetary payments for agricultural production in Vietnam include basically irrigation fees, seed subsidies, preferential credits, and fertilizer and electricity subsidies. Since irrigation is mainly used for rice production, the irrigation subsidy is attributed wholly to rice and not allocated across commodities. Similarly, most seed subsidies are spent on rice due to the fact that rice is the most important agricultural item in terms of production value and export turnover. Adding the irrigation and seed subsidies gives budgetary payments to rice.

The sum of the budgetary payments and nominal MPS for rice is the nominal PSE. The %PSE for rice is computed by the OECD and trade economist approaches. In the OECD approach, the %PSE for rice is equal to the nominal PSE divided by the sum of budgetary payments and the production of rice valued by the farm price. In the trade economist approach, the %PSE equals the nominal PSE divided by the production of rice valued by the farm-gate equivalent reference price. The results are represented in Appendix Table 1 and Figure 20. The difference between the %PSE measured is not so much except 1988 when super inflation increased domestic prices and the overvalued currency made reference prices being undervalued when being converted into Vietnamese Dong. In general, there is an increasing trend of support for rice. In the first half of the nineties, rice was taxed as the %PSE was negative. Since 1997, rice has been increasingly protected and the protection reaches higher levels in the years 1999-2001.

Figure 20: %PSE for rice, 1986-2002



Source: Own calculations

Gelöscht: ¶

b. PSE for the Agricultural Sector

To calculate the PSE for the whole agricultural sector, the nominal PSE is computed first by adding up nominal MPS for the agricultural sector with budgetary payments for the agricultural sector.

As nominal MPS for the agricultural sector is equal to the sum of nominal MPS for all agricultural commodities, it seems very difficult to be reached given a limited number of selected commodities under consideration due to resource constraints. Hence, two different approaches have been used: i) protection for commodities which have not been included in the MPS calculations is the same as for the nine included commodities, and ii) non-included commodities are not protected. In the first assumption, the nominal MPS calculated for chosen commodities, MPS_c, will be scaled up to the whole agricultural sector, using the share of output value of selected commodities in total agricultural output value. In the second approach, the nominal MPS for the whole agricultural sector equals the nominal MPS of the selected commodities.

The nominal MPS for the whole agricultural sector is then added to the budgetary payments PP for the agricultural sector to give the nominal PSE for the agricultural sector. Specifically, PSE_c corresponds to the sum of MPS_c and PP, and PSE corresponds to the sum of MPS and PP. The budgetary payments here include subsidies for irrigation, seed, fertilizer and electricity and preferential credits for all agriculture. The budgetary payments just become significant since 1995 with a sharp increase in irrigation subsidy.

Having the nominal PSE for the whole agricultural sector, we follow the OECD and trade economist approaches to get the %PSE for the agricultural sector (See Appendix Table 2).

Following the OECD approach, the nominal PSE is divided by the sum of the agricultural output value at farm prices and the budgetary payments. As the nominal PSE is computed for two cases: 'scaling up' and 'without scaling up', the %PSE is calculated correspondingly (Figure 21). A comparison of the %PSE results for 'scaling up' and 'without scaling up' cases shows they follow a similar trend and only differ much in value in the early 1990s when MPS was negative and the covered share relatively low. The general similarity results from the included commodities accounting for about 70% of total agricultural production. However, the %PSE calculated in the second scenario seems more likely to be the fact, as most important agricultural commodities, which are more likely to be subject to policy attention, are chosen for investigation. Excluded commodities do receive negligible policy attention. The scaling up procedure thus gives upward biased results, as the assumption that excluded and included commodities are subject to similar protection levels does not hold well.

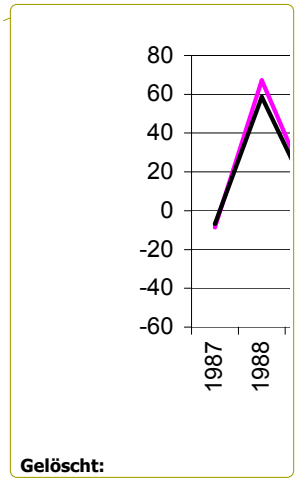
Following the trade economist approach, the nominal PSE for the agricultural sector is divided by agricultural production valued by the farm-gate equivalent international prices. Here, the %PSE is calculated also for scaling up and without scaling up cases (Appendix Table 2). The

%PSE of the trade economist approach is greater than that of the OECD approach. Hence, the OECD approach using the domestic farm-gate prices in valuing the agricultural output give a lower estimate of agricultural protection during the years that protection does exist and overestimates agricultural disprotection when there is a tax. Because of the difference in the denominators, the %PSE by the OECD and trade economist approaches get similar as the absolute values of the %PSE are small. When the MPS and the budgetary payments cancel each other, the difference between the %PSE of the two approaches disappears. In case of Vietnam during 1987-2002, the difference in the %PSE results by the OECD and trade economist approaches is marginal as the %PSE in the OECD approach remains at a moderate level.

In general, the %PSE calculated shows that protection in Vietnam is recently at moderate and acceptable levels. Figure 21 shows the result using the OECD approach. It should be noted that the results might be slightly underestimated, as seed subsidies in programs at the provincial level could not be taken into account. Similarly, loans with preferential interest rates provided to minorities in the early 1990s by the Bank for Agriculture and Rural Development have not been included due to the lack of data. Concessional loans as promoted in the one-million-ton sugar program and the tea production promotion at the local level are not incorporated as well.

Figure 21: %PSE in agriculture, 1987-2002

Source: Own calculations



Gelöscht:

5 Summary and Conclusion

Agricultural protection and support seems to emerge and increase in the recent half decade in Vietnam. In the first half of the 1990s, most %MPS calculated for commodities and %PSE for the whole agricultural sector were negative implying that there was a net tax on agriculture. This was the time of opening the economy and starting to widen international trade relations. Trading enterprises tried to increase export revenues, without receiving any state support. The dominance and monopoly position of the state-owned sector, restrictive trade policies like export quotas and licenses, and distorted markets and prices in the country are underlying reasons of the agricultural disprotection. In addition, *de facto* large inefficiencies in the production and processing of agricultural commodities lead to lower farm prices, and thus indirectly result in disprotection. In the second half of the 1990s, %MPS of some commodities and %PSE turned out to be positive. This is due to the fact that obstacles to free trade have been gradually removed and more supporting policies have been designed to encourage agricultural production and export.

The pre-1990 %MPS and %PSE may not give a true story because of distorted economic indices, namely the overvalued exchange rate, super inflation and centrally set prices of domestic commodities at that time. The overvalued exchange rate undervalues exportables or importables when these are converted into Vietnamese Dongs. Meanwhile, the super inflation during 1986-89 increased domestic prices of Vietnamese commodities, resulting briefly in high and positive %MPS and %PSE.

Protection varies from commodity to commodity. Rice, tea and sugar are protected while pig meat, groundnut, coffee and cashew nut are disprotected. Rubber and pepper reflect a neutral situation where their adjusted reference prices are more or less the same as the farm prices. This may be due to supporting policies regarding specific commodities. For commodities which have been exported for a longer time period like rice and tea, there have been many encouraging measures designed to promote the export of these items. Sugar and sugarcane are specified as an import substitute and hedged by import quota and tariff. For commodities where the exports increased recently or their share in total export revenue account for small parts in agricultural export revenue, like groundnut and pig meat, there have not been many supporting policies and the calculated %MPS is negative.

These commodity-specific results are then compared with other studies on protection rates in agriculture in Vietnam. The results are often consistent with our calculations but also indicate that neglecting adjustment factors may lead to wrong signs of the estimated protection or disprotection.

In summary, the development of the Vietnamese agricultural sector in the last sixteen years with increases in production and export of several agricultural products is very impressive. This helps improving directly the livelihood of many Vietnamese poor who live based on agriculture and at the same time provides a source of foreign exchange earning for the country. The development in agriculture is a result of the market-oriented reform, and later, direct agricultural supporting policies. Commodity-specific policies are gradually designed as the importance of the commodities in terms of foreign exchange earnings or savings grows. The protection calculated is therefore increasing over time, and turns out to be positive recently. However, it is in general at a moderate and acceptable level compared with other countries. Protection over agro-industry, however, seems to be costly as in the case of sugar. The findings are in accordance with qualitative assessments from other studies (UNDP, 2004 and ISG, 2001). Vietnamese supporting policies show the same trend as developing countries, based more on market-based measures than on budgetary payments. With the low level of agricultural protection, there may not be a serious problem in the agricultural production and farmers' income if Vietnam continues its integration process.

References

Anderson, Kym (1998) *Vietnam's Transforming Economy and WTO Accession*, Adelaide: Centre for International Economic Studies, 1998 (Also published by Singapore: Institute of Southeast Asian Studies, 1999).

Athukorala, Prema-Chantra (2002) Trade Policy Reform, Export Strategies and the Incentive Structure, Background Paper for the World Bank Study: Vietnam's Exports: Policy and Prospects (September 2002), quoted in Auffret, P. (2003) *Trade Reform in Vietnam: Opportunities with Emerging Challenges*, World Bank Policy Research Working Paper No. 3076, World Bank, Washington D.C.

Auffret, Philippe (2003) *Trade Reform in Vietnam: Opportunities with Emerging Challenges*, World Bank Policy Research Working Paper No. 3076, World Bank, Washington D.C.

Barker, Randolph *et al*. (1994) Agricultural policy analysis for transition to a market-oriented economy in Viet Nam. Selected issues, FAO, FAO economic and social development paper No. 123, Rome.

Barker, Randolph *et al*. (2001) Irrigation Investment, Fiscal Policy and Water Resource Allocation in Indonesia and Vietnam, IFPRI Project No. 2635-000, Country Report, Vietnam, Vol. 1, ADB RETA 5866.

Beierle, Thomas (2002) http://www.rff.org/documents/rff-dp-02-13.pdf

Bridges (2003) Bridges Weekly Trade News Digest, International Centre for Trade and Sustainable Development, Geneva, Vol.7, No.32, 1 October.

Bonschab, Thomas and Rainer Klump (2004) Case Study Vietnam. White draft, June, University of Frankfurt.

Cheng, Fuzhi and David Orden (2004) *Exchange Rate Misalignment and Its Effects on Agricultural Producer Support Estimates: Empirical Evidence from India and China*, Draft MTID Discussion Paper, IFPRI, Washington, D.C.

CIEM (2003) An Assessment of the Economic Impact of the United States-Vietnam Bilateral Trade Agreement, Vietnam Central Institute of Economic Management (CIEM), Star-Vietnam. Accessed on 05.08.2004 at: http://www.us-asean.org/Vietnam/ Vietnam_Econ_Report_2002.pdf

EU-website, at http://europa.eu.int/comm/external_relations/vietnam/intro/, accessed on 06.07.2004

Food and Agriculture Organisation (FAO, 2004) Statistics on Agriculture, available at: http://faostat.fao.org/faostat/collections?version=ext&hasbulk=0&subset=agriculture, accessed on 06.03.2004

Fukase, Emiko and Will Martin (1999) The Effect of the United States's Granting Most Favored Nation Status to Vietnam. Accessible at: http://www.vninvest.com/ecolib/?show=article&id=2, accessed on 30/07/2004.

General Statistic Office of Vietnam (GSO) (various years) *Statistical Yearbook*, Statistical Publishing House, Hanoi, Vietnam.

GSO (1999) Effective Rate of Protection for 97 Commodities, Underground Calculation for Input-Ouput Table of Vietnam, Statistical Publishing House, Hanoi.

Goletti, Francesco *et al*. (1997) *Marketing Constraints on Rice Exports from Vietnam*, IFPRI Discussion Paper No. 15, IFPRI, Washington D.C.

Goletti, Francesco (1998) Trade Distortions and Incentives in Agricultural Trade: the Case of Rice, Sugar, Fertilizer, and Livestock-Meat-Feed Sub-sectors in Vietnam, Background Paper for the World Bank Vietnam Rural Development Strategy, IFPRI, Washington D.C.

Institute for Agricultural Economics (IAE, 2001) Assessing the Domestic Demand on Rice, Pig Meat and Chip of Wood in Vietnamese Market, Scientific Report in 2001, Hanoi, in Vietnamese.

Institute for Agricultural Planning and Projecting (IAPP, 1997) Projection on Development of Cashew Nut in Vietnam, First Report, MARD, Hanoi, in Vietnamese.

Institute for Agricultural Planning and Projecting (IAPP, 2002) Adjustment on Projection of Tea Production until 2005 and 2010 in Vietnam, MARD, Hanoi, in Vietnamese.

Institute for Agricultural Planning and Projecting (IAPP, 2001): Report on Strategy for Developing the Livestock Sector in Vietnam until 2010, Hanoi

International Monetary Fund (IMF, 2003) International Financial Statistics 2003, IMF, Washington DC.

International Support Group (ISG, 2001) General Report on Analysis of Vietnam Agricultural Policy under the Context of WTO, Hanoi, Vietnam, available at: http://www.isgmard.org.vn/Information%20Service/Report/Agriculture/General%20report-WTO-e.pdf, accessed on 18.12.2003.

International Support Group (ISG, 2002) Report Summary: Impact of Trade Liberalisation on Some Agricultural Sub-sectors of Vietnam: Rice, Coffee, Tea and Sugar, Ministry of Agriculture and Rural Development, Hanoi, available at: www.isgmard.gov.vn

Institute for Trade Research (2001) Agricultural Commodities, Ministry of Trade, Hanoi, in Vietnamese.

Jensen, Henning Tarp and Finn Tarp (2003) Trade Liberalization and Spatial Inequality: Methodological Innovations in a Vietnamese Perspective, Tokyo.

Kherallah, M. and Francesco Goletti (2000) Vietnam Public Expenditure Review. Input on the Agricultural and Rural Sectors, Final donor report submitted to the World Bank, mimeo, IFPRI.

Khiem, Nguyen Tri *et al*. (1996) Vietnam Rice Economy, mimeo, in: Young, K. B. *et al*. (2002) Vietnam's Rice Economy: Developments and Prospects, available at www.uark.edu/depts/agripub/publications/bulletins/968.pdf, accessed on 10/6/2004.

Le, Van Dien *et al*. (1990) Policies to Promote Production of Tea for Export, Institute for Agricultural Economics, Hanoi, in Vietnamese.

Martin, Will (2001) Trade Policy Reform in the East Asian Transition Countries, revised paper presented at the International Conference on Achieving High Growth: Experience of Transition Economies in East Asia, Australian National University, available at: http://econ.worldbank.org/files/1393_wps2535.pdf, accessed on 08.03.2004.

McLeod, A. *et al*. (2003) The Potential Impact of Vietnam's Entry to the WTO on the Livelihood of Smallholder Pig Producers and Small Pig Traders, available at http://www.bsas.org.uk/meetings/occpdfs/mexico03/008.pdf, accessed on 14/7/2004.

Melyukhina, Olga (2002) The Measurement of the Level of Support in Selected Non-OECD Countries. In China and the World Economy: Agricultural Policy Adjustments in China After WTO Accession, Organization for Economic Cooperation and Development.

Ministry of Foreign Affairs (13.04.2004) Vietnam to Become Member of International Pepper Community, available at: http://www.mofa.gov.vn:8080/Web%20server/ ForeignPolicy.nsf/0/3f59cc3ef306806947256e75002dab1e?OpenDocument, accessed on 28.07.2004.

MOLISA (a) (2003) Data on Poverty Provided by the Hunger Eradication and Poverty Reduction Project of MOLISA.

MOLISA (b) (Various years, 1997-2002) Statistical Data of Labour-Employment in Vietnam, Annual Survey since 1996, Center for Information-Statistics on Labour and Social Affairs, Statistical Publisher House, Hanoi.

MOT (1999) Decision No. 1555/1999/QD-BTM dated 30 December 1999, MOT, Hanoi, Vietnam.

MOT (2000) Document No. 3936/TM-XNK dated 14 November 2000, MOT, Hanoi, Vietnam.

Mullen, Kathleen et al. (2004) *Producer Support Estimates (PSEs) for Agriculture in Developing Countries: Measurement Issues and Illustrations from India and China*, MTID Discussion Paper No. 74, IFPRI, Washington D.C.

Mullen, Kathleen, David Orden and Ashok Gulati. 2004. *Agricultural Policies in India: Producer Support Estimates 1985-2002*, Draft MTID Discussion Paper, IFPRI, Washington, D.C.

Nguyen, Dinh Long *et al*. (1999) *Exploiting Advantages and Enhancing Competitiveness of Vietnamese Agricultural Exports*, Agricultural Publisher, Hanoi, in Vietnamese.

Nguyen, Manh Hai and Franz Heidhues (2004) Comparative Advantage of Vietnam's Rice Sector under Different Liberalization Scenarios – A Policy Analysis Matrix (PAM) Study, Research in Development Economics and Policy, Discussion Paper No. 01/2004, Institute for Agricultural Economics and Social Sciences in the Tropics and Subtropics, University of Hohenheim.

Nguyen, Ngoc Anh *et al*. (1995) International Markets for Natural Rubber and Perspectives for Vietnamese Export, Institute for International Economics, Project No. 92-78-359, Hanoi, in Vietnamese.

Nguyen, Thi Mo *et al*. (1996) Legal Documents Governing Import-Export Activities in Vietnam and Perspectives for Improvement, Project No. 95-78-437, Ministry of Trade, Hanoi, in Vietnamese.

Nguyen, Thi Nhieu *et al*. (1994) International Market for Groundnut and Perspective for Groundnut Export of Vietnam, Project No. 92.78.358, Institute for International Economics, Ministry of Trade, Hanoi, in Vietnamese.

Nguyen, Tri Hung (1999) The Inflation of Vietnam in Transition. Centre for ASEAN Studies, Discussion Paper No. 22, Ho Chi Minh City.

Nguyen, Trung Que *et al*. (1997) Report on Results of Surveying and Evaluating the Economic Efficiency of several Agricultural Exportables of Vietnam (Rice, Coffee, Tea, Rubber, Groundnut, Pig Meat), Institute for Agricultural Economics, Hanoi, in Vietnamese.

Nguyen, Trung Que *et al*. (2002) Evaluating the Economic Efficiency of some Agricultural Exportables (Pepper, Cashew Nut and Coconut) of Vietnam, Institute for Agricultural Economics, Hanoi, in Vietnamese.

Nguyen, Xuan Nguyen *et al*. (1995) Application of Sectoral Analysis in Designing Agricultural Management and Development Policies in Vietnam, Central Institute for Economic Management, Hanoi, in Vietnamese.

Nin, Alejandro *et al*. (2003) Globalization, Trade Liberalization and Poverty Alleviation in Southeast Asian: the Case of the Livestock Sector in Vietnam, available at: http://www.gtap.agecon.purdue.edu/resources/download/1476.pdf, accessed on 03.08.04

Ohno, Kenichi (2003) Exchange Rate Management of Vietnam: Re-examination of Policy Goals and Modality, available at http://www.grips.ac.jp/vietnam/VDF/WS/Docs/03ohno1.DOC, accessed on June 20, 2004.

Pham, Ngoc Phong (1992) Vietnam Bank for Agriculture: Restructuring a Government-Owned Agricultural Bank, in: *The Making of a Market Economy: Monetary Reform, Economic Transformation and Rural Finance in Vietnam*, Seibel H. D. eds, Cologne Development Studies, KGFE 19, Breitenbach, Cologne.

Politburo (1987) Document of the VIth National Congress of the Communist Party of Vietnam, Su-that Publisher, Hanoi, Vietnam (in Vietnamese).

Portugal, Luis (2002) Methodology for the Measurement of Support and Use in Policy Evaluation, OECD, Paris, http://www.oecd.org/dataoecd/36/47/1937457.pdf, accessed on 24/2/2004.

Pursell, Garry and Anju Gupta (1997) Trade Policies and Incentives in Indian Agriculture: Methodology, Background Statistics and Protection and Incentive Indicators, 1965-95, Background Paper 1, Sugar and Sugarcane. World Bank, International Economics Department, Washington, DC.

Reuters (2001) Historic US-Vietnam Trade Pact Takes Effect, 11 December 2001.

Roland-Holst, David et al. (2002) Vietnam's Accession to the World Trade Organization : Economic Projections to 2020. CIEM/NIAS Discussion Paper No. 0204, Hanoi.

Schmidt, Uwe (2003) Vietnam's Accession to the WTO – A roadmap for a rational approach in trade liberalization – Duisburger Arbeitspapiere zur Ostasienwirtschaft No.88, Duisburg, March.

Thomas, Marcelle and David Orden. 2004. *Agricultural Policies in Indonesia: Producer Support Estimates 1985-2003,* MTID Discussion Paper No. 78, IFPRI, Washington D.C.

Tran, Hoang Kim (1994) Economy of Vietnam: Reviews and Statistics, Statistical Publishing House, Hanoi, Vietnam.

Tran, Thi Bich Loc (2002) Import Markets of Vietnamese Rice, Coffee and Tea and Measures to Export these Commodities in New Conditions, Project No. 2001-78-045, Ministry of Trade, Hanoi, in Vietnamese.

Tran, Thi Que (1998) Vietnam's Agriculture: the Challenges and Achievements, Singapore, Institute of Southeast Asian Studies.

UNDP (2004) Overview of the Agricultural Sector in Vietnam: Implications of the WTO Agreement on Agriculture, available at http://www.undp.org.vn/projects/vie95024/agriculture.pdf, accessed on 12/7/2004.

Vo, Tri Thanh *et al*. (2000) Exchange Rate Arrangement in Vietnam: Information Content and Policy Options, East Asian Development Network, available at http://www.vninvest.com/database/upload/lhg3d6b18f28a121.pdf, accessed on June 27, 2004.

Vietnam Electronic Newspaper (23.09.2003) http://vnexpress.net/Vietnam/Kinh-doanh/2003/09/3B9CBB17/, accessed in June 2004.

World Bank (2002) Vietnam: Agricultural Price Risk Management: Pepper, Rubber and Coffee, Phase 1 Report, available at http://www.vninvest.com/ecolib/upload/vij4025f398092a3.pdf, accessed on 18/07/2004.

World Bank (2004) World Development Indicator 2004, World Bank, Washington DC.

WTO (2003) VIET NAM MEMBERSHIP NEGOTIATIONS 'Quantum jump' needed if Viet Nam is to join in two years, available at http://www.wto.org/english/news_e/news03_e/viet_nam_member_nego_12may03_e.htm, accessed on April 3, 2004.

Young, Kenneth B. *et al*. (2002) Vietnam's Rice Economy: Developments and Prospects, available at www.uark.edu/depts/agripub/publications/bulletins/968.pdf, accessed on 10/6/2004.

Legal documents

Circular No. 53-BNG/VP (October 2, 1982) by the Ministry of Foreign Trade on Procedures for Applying and Issuing Import and Export License.

Decree No. 112/HDBT dated August 25, 1984 by the Minister Council on Irrigation Fee.

Circular No. 10-KTDN/XNK (August 7, 1989) by the Ministry of Foreign Issues on Management of Export and Import Activities.

Decision No. 73-NH/QD (May 31, 1989) by the General Director of the State Bank on lending and borrowing interest rates.

Decision No. 222-TC/CTN (December 29, 1989) by the Minister of the Ministry of Finance providing Detailed Stipulations on the Import-Export Tax.

Decision No. 151-TTG (April 12, 1993) by the Prime Minister on the Establishment, Use and Management of the Price Stabilisation Fund.

Decision No. 405-TM/XNK (April 13, 1993) by the Minister of the MOT on The List of Importables and Exportables via Vietnamese Boundaries.

Circular No. 03/TT-LB (May 28, 1993) by the State Pricing Committee and Ministry of Finance on the Implementation of Decision No. 151-TTG (April 12, 1993).

Decree No. 92/CP (November 27, 1993) by the Government guiding the Implementation of Ordinance on Plant Protection and Quarantine.

Decree No. 93/CP (November 27, 1993) by the Government guiding the Implementation of Ordinance on Veterinary Issues.

Decision 05/BVGCP-BOG (January 26, 1995) by the Pricing Committee on Customs Surcharges applied on Unprocessed Cashew Nut Export.

Decree No. 89/CP (December 15, 1995) by the Government on the Elimination of Import and Export License on Each Time of Import and Export.

Decision No. 140/TTG (March 07, 1997) by the Prime Minister on Policy and Measures to Monitor Food and Fertilizer in 1997.

Decree No. 57/1998/ND-CP (July 31, 1998) by the Vietnamese Government on the Implementation of the Commercial Law regarding the Import and Export of Goods, Good Processing Activities and Business Trading Agency with Foreign Partners.

Decision No. 189/1999/QD-NHNN1 (May 29, 1999) by the Governor of the Central Bank on the Ceiling Interest of Loans in Vietnamese Dong.

Decision No. 195/1999/QD-TTg (27 September 1999) by the Prime Minister on the Establishment, Use and Management of the Export Support Fund.

Decision No. 1067/QD-TTg (October 27, 2000) by the Prime Minister on Measures to Support Coffee Export 2000/2001.

Decision No. 20/2001/QD-BVGCP (March 26, 2001) by the Pricing Committee on Customs Surcharges applied Unprocessed Rubber Latex Export.

Circular No. 128/2003/TT-BTC (December 22, 2003) by the Ministry of Finance on the Implementation of the Law on Enterprise Revenue Tax.

Appendix

Appendix Table 1: Vietnam's agricultural MPS, 1986-2002

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Exchange rate (VND/US$)	174	797	703	3,250	6,750	10,037	11,202	10,641	10,966	11,038	11,033	11,683	13,268	13,943	14,168	14,725	15,280
Rice																	
Pfob (US$/tons)	164	142	298	204	188	227	215	211	214	267	285	244	273	227	192	168	224
Pfob (VND/kg)	28	113	210	664	1,266	2,278	2,405	2,243	2,350	2,943	3,141	2,846	3,627	3,170	2,721	2,472	3,423
Par (VND/kg)	22	89	165	521	994	1,788	1,887	1,760	1,844	2,309	2,465	2,233	2,846	2,488	2,135	1,940	2,686
Pd (VND/kg)	19	111	509	569	617	1,316	1,471	1,372	1,444	1,848	2,563	2,670	3,465	3,474	2,922	2,784	3,131
%MPS	**-13.6**	**24.7**	**208.5**	**9.2**	**-37.9**	**-26.4**	**-22.0**	**-22.0**	**-21.7**	**-20.0**	**4.0**	**19.6**	**21.7**	**39.6**	**36.9**	**43.5**	**16.6**
Coffee																	
Pfob (US$/tons)	2,559	1,954	1,733	1,411	1,032	816	787	903	1,872	2,411	1,409	1,270	1,554	1,213	683	420	445.8
Pfob (VND/kg)	445	1,557	1,218	4,586	6,966	8,190	8,816	9,609	20,528	26,613	15,545	14,837	20,618	16,913	9,677	6,184	6,813
Par (VND/kg)	268	937	733	2,761	4,193	4,930	5,307	5,785	12,358	16,021	9,358	8,932	12,412	10,182	5,825	3,723	4,101
Pd (VND/kg)	173	593	2,600	4,305	3,389	5,751	7,419	8,139	8,952	8,850	5,340	8,819	11,529	15,052	9,707		
%MPS	**-35.4**	**-36.7**	**254.7**	**55.9**	**-19.2**	**16.6**	**39.8**	**40.7**	**-27.6**	**-44.8**	**-42.9**	**-1.3**	**-7.1**	**47.8**	**66.6**		
Tea																	
Pfob (US$/tons)	1,395	1,450	1,411	1,508	1,536	1,159	1,243	957	1,098	1,011	1,442	1,466	1,530	1,254	1,252	1,155	1,103
Pfob (VND/kg)	243	1,156	992	4,901	10,370	11,637	13,928	10,190	12,039	11,155	15,913	17,129	20,302	17,486	17,734	17,003	16,849
Par (VND/kg)	233	1,108	951	4,700	9,945	11,160	13,356	9,771	11,546	10,698	15,260	16,426	19,470	16,769	17,007	16,306	16,158
Pd (VND/kg)	205	447	2,599	5,500	5,450	9,249	11,931	13,088	14,397	16,931	15,126	16,824	22,314	23,172	20,359	21,387	18,500
%MPS	**-12.0**	**-59.6**	**173.3**	**17.0**	**-45.2**	**-17.1**	**-10.7**	**33.9**	**24.7**	**58.3**	**-0.9**	**2.4**	**14.6**	**38.2**	**19.7**	**31.2**	**14.5**
Cashew nut																	
Pfob (US$/tons)	798	1,002	1,002	671	603	687	801	1,048	1,402	1,717	3,636	4,004	4,551	5,965	4,892	3,479	3,376
Pfob (VND/kg)	139	798	705	2,181	4,068	6,898	8,973	11,154	15,377	18,954	40,120	46,799	60,387	83,164	69,316	51,236	51,528
Par (VND/kg)	84	481	426	1,315	2,453	4,161	5,412	2,613	3,615	4,456	5,851	6,825	8,806	12,127	10,109	7,472	7,514
Pd (VND/kg)					1,700	3,000	3,870	4,245	4,670	5,492	5,761	5,985	8,879	11,722	9,705	7,576	6,750
%MPS					**-30.7**	**-27.9**	**-28.5**	**61.8**	**29.2**	**23.2**	**-1.5**	**-12.3**	**-0.8**	**-3.3**	**-4.0**	**1.4**	**-10.2**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Groundnut																	
Pfob (US$/tons)	448.5	471	508	556	576	607	510	438	584	662.6	685	548	483	590	538	488	486
Pfob (VND/kg)	78	375	357	1,807	3,888	6,093	5,717	4,662	6,403	7,314	7,558	6,405	6,413	8,227	7,619	7,188	7,426
Par (VND/kg)	52	249	237	1,198	2,576	4,038	3,789	3,089	4,243	4,847	5,009	4,244	4,250	5,452	5,049	4,763	4,921
Pd (VND/kg)	38	135	700	1,650	1,584	1,983	2,005	2,556	2,850	3,580	4,394	4,620	4,991	5,156	4,600	4,853	4,400
%MPS	**-26.9**	**-45.8**	**195.3**	**37.7**	**-38.5**	**-50.9**	**-47.1**	**-17.2**	**-32.8**	**-26.1**	**-12.3**	**8.8**	**17.4**	**-5.4**	**-8.9**	**1.9**	**-10.6**
Rubber																	
Pfob (US$/tons)	815	811	850	813	875	788	817	773	999	1,361	1,308	981	667	554	607	539	592
Pfob (VND/kg)	142	646	597	2,642	5,906	7,909	9,152	8,225	10,955	15,023	14,431	11,461	8,850	7,724	8,600	7,937	9,051
Par (VND/kg)	133	606	560	2,478	5,540	7,419	8,585	7,715	10,276	14,092	13,536	10,750	8,301	7,245	8,067	7,445	8,490
Pd (VND/kg)											9,839	10,954	9,300	8,479	7,659	6,456	10,080
%MPS											**-27.3**	**1.9**	**12.0**	**17.0**	**-5.0**	**-13.3**	**18.7**
Black pepper																	
Pfob (US$/tons)	3,323	3,814	2,654	1,653	1,544	1,086	686	953	1,656	2,179	1,846	2,733	4,265	3,942	3,569	1,601	1,403
Pfob (VND/kg)	578	3,040	1,866	5,372	10,422	10,900	7,685	10,141	18,160	24,052	20,367	31,930	56,588	54,963	50,566	23,575	21,432
Par (VND/kg)	498	2,617	1,607	4,625	8,973	9,385	6,617	8,731	15,636	20,709	17,536	27,492	48,723	47,323	43,537	20,298	18,453
Pd (VND/kg)	520	2,900	7,600	7,700	8,220	9,980	7,780	9,600	17,540	21,080	18,500	29,700	52,000	51,500	40,500		
%MPS	**4.4**	**10.8**	**372.9**	**66.5**	**-8.4**	**6.3**	**17.6**	**9.9**	**12.2**	**1.8**	**5.5**	**8.0**	**6.7**	**8.8**	**-7.0**		
Sugar																	
Pcif (US$/tons)	303	301	331	351	374	316	301	293	346	392	396	200	181	162	210	262	
Pcif (VND/kg)	53	240	232	1,141	2,526	3,176	3,371	3,123	3,790	4,324	4,372	2,337	2,405	2,257	2,970	3,859	
Par (VND/kg)	56	254	246	1,209	2,678	3,367	3,573	3,310	4,017	4,583	4,634	2,477	2,549	2,392	3,148	4,090	
Pd (VND/kg)	73	363	436	1,042	969	1,647	2,132	2,326	2,568	3,004	13,932	11,654	11,557	10,685	8,868	15,773	
%MPS	**30.4**	**42.9**	**77.2**	**-13.8**	**-63.8**	**-51.1**	**-40.3**	**-29.7**	**-36.1**	**-34.4**	**200.6**	**370.5**	**353.4**	**346.7**	**181.7**	**285.6**	
Pig meat																	
Pfob (US$/tons)	16589	1,714	1,750	1,715	1,723	1,800	1,742	1,746	1,353	1,707	1,751	2,750	2,045	1,619	1,607	1,614	1,277
Pfob (VND/kg)	2,886	1,366	1,230	5,574	11,628	18,065	19,517	18,581	14,839	18,842	19,316	32,125	27,130	22,568	22,772	23,763	19,511
Par (VND/kg)	1,903	901	811	3,675	7,668	11,912	12,869	12,252	9,785	12,424	12,737	21,183	17,889	14,882	15,016	15,669	12,866
Pd (VND/kg)	84	323	1,700	3,230	3,045	5,489	5,536	7,203	7,761	11,206	11,157	10,132	10,412	12,020	10,412	9,728	13,562
%MPS	**-95.6**	**-64.3**	**108.6**	**-12.5**	**-60.5**	**-54.1**	**-57.2**	**-41.5**	**-21.0**	**-10.2**	**-12.8**	**-52.4**	**-42.0**	**-19.6**	**-31.0**	**-38.2**	**4.9**

Appendix Table 2: Vietnam's PSE, 1986-2002

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
PSE for rice																	
Nominal PSE (VND bill.)	-33	228	3,823	623	-4,648	-5,864	-5,648	-5,558	-5,911	-7,129	2,143	8,312	12,335	20,799	17,204	18,304	10,737
• MPS	-33	220	3,784	576	-4,712	-5,994	-5,824	-5,742	-6,120	-7,468	1,666	7,822	11,699	20,114	16,606	17,640	9,968
• Budgetary payments		8	39	47	64	130	176	184	209	339	477	490	636	685	598	664	769
PSE (%) -																	
OECD Denominator	-15.8	20.4	67.8	9.1	-59.8	-34.8	-27.2	-27.1	-26.5	-23.5	4.9	17.2	18.6	29.1	27.6	31.1	15.1
Trade Economist Denominator	-13.6	25.6	210.6	10.0	-37.4	-25.8	-21.4	-21.3	-20.9	-19.1	5.1	20.8	22.9	41.0	38.2	45.1	17.8
Difference	2.2	5.2	142.8	0.9	22.4	9.0	5.8	5.8	5.6	4.4	0.2	3.6	4.3	11.9	10.6	14.0	2.7
PSE for agriculture																	
Measure support (VND bill.)																	
• MPSc		-174	4,685	462	-8,980	-11,725	-12,687	-9,841	-9,187	-10,932	2,368	-491	8,006	25,825	16,573	12,695	11,186
• Budgetary Payments		8	39	47	1,066	795	605	485	-1,138	3,703	488	1,702	882	1,742	-126	632	1,063
• Covered share (%)		86.0	86.9	69.9	64.0	61.6	57.9	61.0	62.7	61.6	75.7	82.6	80.5	82.9	74.2	69.0	82.3
• MPS		-203	5,394	661	-14,021	-19,031	-21,995	-16,127	-14,647	-17,730	3,128	-594	9,948	31,139	22,335	18,406	13,585
PSE (VN bill.)																	
• PSEc		-166	4,724	509	-7,914	-10,930	-12,082	-9,356	-10,325	-7,229	2,856	1,211	8,888	27,567	16,447	13,327	12,249
• PSE		-194	5,433	708	-12,955	-18,236	-21,390	-15,642	-15,785	-14,027	3,616	1,108	10,830	32,881	22,209	19,038	14,648
PSE (%)- OECD denominator																	
• PSEc		-13.4	60.6	3.8	-36.4	-25.6	-24.3	-17.2	-16.2	-8.1	3.1	1.2	7.8	21.4	13.1	10.6	9.7
• PSE		-15.6	69.7	5.3	-59.6	-42.7	-43.1	-28.7	-24.8	-15.7	3.9	1.1	9.5	25.6	17.7	15.1	11.6

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Trade Economist Denominator																	
• PSEc		-9.4	175.3	3.9	-26.9	-20.9	-18.4	-15.1	-15.8	-8.1	3.4	1.4	8.5	28.2	15.5	13.1	11.7
• PSE		-11.0	201.6	5.5	-44.1	-34.8	-32.6	-25.3	-24.2	-15.7	4.4	1.3	10.3	33.6	20.9	18.7	14.0

Source: Own calculations

*: The denominator for the %PSE for the trade economist approach is obtained by first summing included commodities valued at the adjusted reference price and then scaling this sum by the share of included commodities in total agricultural sector.

Appendix Table 3: Components of MPS estimates

	Agricultural commodities			
Category	**Rice**	**Coffee**	**Tea**	**Cashew nut**
Period coverage (Calendar years)	1986-2002	1986-2000	1986-2002	1990-2002
Trade status	Exportable	Exportable	Exportable	Exportable
Reference domestic market	Wholesale	Wholesale	Wholesale	Wholesale
Border Price	f.o.b. Vietnamese port	f.o.b. Vietnamese port	f.o.b. Vietnamese port	f.o.b. Vietnamese port
Source	*FAO database*	*FAO database*	*FAO database*	*FAO database*
• Exchange Rate	Annual average	Annual average	Annual average	Annual average
Source	*IMF, 2003*	*IMF, 2003*	*IMF, 2003*	*IMF, 2003*
Internal Cost Adjustments	19.1% of the f.o.b. price.	39.8% of the f.o.b. price	4.1% of the f.o.b price.	49% of the f.o.b. price of unprocessed cashew nut.
Port charges	2% of the f.o.b. price			
Handling and Transport from Port to Wholesale	7.3% of the f.o.b. price	10% of the f.o.b. price	3.6% of the f.o.b price.	23% of the f.o.b. price of unprocessed cashew nut
Marketing margin of Traders	9.8% of the f.o.b. price	4% of the f.o.b. price.	0.5% of the f.o.b price.	26% of the f.o.b. price of unprocessed cashew nut
Transportation costs and Marketing margin of Assemblers		30% of the selling price to exporters		0.8% of the selling price to exporters
Sources	*Xuan Nguyen Nguyen et al. (1995) Trung Que Nguyen et al. (1997) Khiem et al. (1996)*	*Trung Que Nguyen et al. (1997)*	*Van Dien Le et al. (1990)*	*Trung Que Nguyen et al. (2002)*
Domestic Price (farm price)	Farm prices of paddy converted to producer prices of milled rice	Farm price	Farm price	Farm price
Sources	*GSO Xuan Nguyen Nguyen et al. (1995)*	*GSO*	*GSO*	*GSO*

Category	Agricultural commodities			
	Rice	**Coffee**	**Tea**	**Cashew nut**
Internal Cost Adjustments for Domestic Output (MM)				
• *Conversion factor*	*0.70*			*1.645 (1990-92)* *4.225 (1993-95)* *6.805 (1996-2002)*
Sources	*Xuan Nguyen Nguyen et al. (1995)*			*IAPP (1997)* *Trung Que Nguyen et al. (1997)*
Quality and Process Level Adjustments	3%			
Source	IAE (2001)			

Category	Agricultural commodities (contd.)				
	Groundnut	**Rubber**	**Black pepper**	**Sugar**	**Pig meat**
Period coverage (Calendar years)	1986-2002	1996-2002	1986-2000	1986-2001	1986-2002
Trade status	Exportable	Exportable	Exportable	Importable	Exportable
Reference domestic market	Wholesale	Wholesale	Wholesale	Wholesale	Wholesale
Border Price	f.o.b. Vietnamese port	f.o.b. Vietnamese port	f.o.b. Vietnamese port	c.i.f. Vietnamese port	f.o.b. Vietnamese port
Source	*FAO database*	*FAO database*	*FAO database*	*FAO database*	*FAO database*
• Exchange Rate	Annual average	Annual average	Annual average	Annual average	Annual average
Source	*IMF, 2003*	*IMF, 2003*	*IMF, 2003*	*IMF, 2003*	*IMF, 2003*

Category	Agricultural commodities (contd.)				
	Groundnut	**Rubber**	**Black pepper**	**Sugar**	**Pig meat**
Internal Cost Adjustments	11% of f.o.b. price	6.2% of f.o.b. price	6.4% of f.o.b. price	6% of c.i.f. price	21.5% of f.o.b. price
Port charges/Loading fees				1% of the c.i.f. price	
Handling and Transport from Port to Wholesale	8.5%	5.9%	5.3%	2% of the port price	20.8%
Marketing margin of Traders	2.5%	0.3%	1.1%	3% of the port price	0.7%
Source	*Trung Que Nguyen et al. (1997)*	*Trung Que Nguyen et al. (1997)*	*Trung Que Nguyen et al. (2002)*	*Trung Que Nguyen et al. (1997)*	*Trung Que Nguyen et al. (1997)*
Domestic Price (farmgate or other)	Farm price	Farm price	Farm price	Farm prices of sugarcane converted into producer prices of sugar	Farm price
Source	*GSO*	*GSO*	*GSO*	*GSO*	*GSO*
Internal Cost Adjustments for Domestic Output					
• *Conversion factor*	*0.89*			*9.74*	
Sources	*Trung Que Nguyen et al. (1997)*			*IAPP (1997)* *Trung Que Nguyen et al. (1997)*	
Quality and Process Level Adjustments		*16%*			*16%*
Source		*Ngoc Anh Nguyen et al. (1995)*			*Trong Ngu Nguyen (2004)**

* : information from interview with Trong Ngu Nguyen, Lecturer, College of Agriculture, Cantho University, Vietnam.

Appendix Table 4: Calculation of MPS and PSE for rice

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	Mill. tons	11	10	11	12	12.5	12.7	14	14.8	15.3	16.2	17	17.9	18.9	20.4	21.1	20.9	22.4
2. Reference price (Pfob)	VND/kg	28	113	210	664	1,266	2,278	2,405	2,243	2,350	2,943	3,141	2,846	3,627	3,170	2,721	2,472	3,423
3. Marketing margin	%	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1	19.1
4. Marketing margin	VND/kg	5	21	40	127	242	435	459	428	449	562	600	544	693	605	520	472	654
5. Quality adjustment	%	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
6. Quality adjustment	VND/kg	1	3	5	16	30	55	59	55	57	72	76	69	88	77	66	60	83
7. Adjusted reference price (Par)	VND/kg	22	89	165	521	994	1,788	1,887	1,760	1,844	2,309	2,465	2,233	2,846	2,488	2,135	1,940	2,686
8. Average farm price (Pd)	VND/kg	19	111	509	569	617	1,316	1,471	1,372	1,444	1,848	2,563	2,670	3,465	3,474	2,922	2,784	3,131
9. Market price support (MPS)	VND bn	-33	220	3,784	576	-4,712	-5,994	-5,824	-5,742	-6,120	-7,468	1,666	7,822	11,699	20,114	16,606	17,640	9,968
10. Market price support (MPS)	%	-13.6	24.7	208.5	9.2	-37.9	-26.4	-22.0	-22.0	-21.7	-20.0	4.0	19.6	21.7	39.6	36.9	43.5	16.6
11. Budgetary payments	VND bn		8	39	47	64	130	176	184	209	339	477	490	636	685	598	664	769
12. Producer support estimate (PSE)	VND bn	-33	228	3,823	623	-4,648	-5,864	-5,648	-5,558	-5,911	-7,129	2,143	8,312	12,335	20,799	17,204	18,304	10,737
13. Producer support estimate (PSE)	%	-15.8	20.4	67.8	9.1	-59.8	-34.8	-27.2	-27.1	-26.5	-23.5	4.9	17.2	18.6	29.1	27.6	31.1	15.1

Appendix Table 5: Calculation of MPS for coffee

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	1000 tons	18.8	20.5	31.3	40.8	59.3	67	71.8	131.3	180	218	316.9	420.5	409.3	553.2	802.5	840.6	688.7
2. Reference price (Pfob)	VND/kg	445	1,557	1,218	4,586	6,966	8,190	8,816	9,609	20,528	26,613	15,545	14,837	20,618	16,913	9,677	6,184	6,813
3. Marketing margin	%	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8	39.8
4. Marketing margin	VND/kg	177	620	485	1,825	2,773	3,260	3,509	3,824	8,170	10,592	6,187	5,905	8,206	6,731	3,852	2,461	2,712
5. Adjusted reference price (Par)	VND/kg	268	937	733	2,761	4,193	4,930	5,307	5,785	12,358	16,021	9,358	8,932	12,412	10,182	5,825	3,723	4,101
6. Average farm price (Pd)	VND/kg	173	593	2,600	4,305	3,389	5,751	7,419	8,139	8,952	8,850	5,340	8,819	11,529	15,052	9,707		
7. Market price support (MPS)	VND bn	-2	-7	58	62	-49	53	150	306	-623	-1,579	-1,287	-65	-385	2,668	3,093		
8. Market price support (MPS)	%	-35.4	-36.7	254.7	55.9	-19.2	16.6	39.8	40.7	-27.6	-44.8	-42.9	-1.3	-7.1	47.8	66.6		

Appendix Table 6: Calculation of MPS for tea

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	1000 tons	30.1	29	29.7	30.2	32.2	33.1	36.2	37.7	42.0	40.2	46.8	52.2	56.6	70.3	69.9	75.7	89.6
2. Reference price (Pfob)	VND/kg	243	1,156	992	4,901	10,370	11,637	13,928	10,190	12,039	11,155	15,913	17,129	20,302	17,486	17,734	17,003	16,849
3. Marketing margin	%	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1	4.1
4. Marketing margin	VND/kg	10	48	41	201	425	477	572	419	493	557	653	703	832	717	727	697	691
5. Adjusted reference price (Par)	VND/kg	233	1,108	951	4,700	9,945	11,160	13,356	9,771	11,546	10,698	15,260	16,426	19,470	16,769	17,007	16,306	16,158
6. Average farm price (Pd)	VND/kg	205	447	2,599	5,500	5,450	9,249	11,931	13,088	14,397	16,931	15,126	16,824	22,314	23,172	20,359	21,387	18,500
7. Market price support (MPS)	VND bn	-0.8	-19	49	24	-145	-63	-52	125	120	250	-6	21	16	45	234	385	210
8. Market price support (MPS)	%	-12.0	-59.6	173.3	17.0	-45.2	-17.1	-10.7	33.9	24.7	58.3	-0.9	2.4	14.6	38.2	19.7	31.2	14.5

Appendix Table 7: Calculation of MPS for cashew nut

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	1000 tons	80	100	80	100	140	160	94.8	186.4	208	202.4	236.4	267.6	216	164.8	270.4	292.8	515.2
2. Reference price (Pfob)	VND/kg	139	798	705	2,181	4,068	6,898	8,973	11,154	15,377	18,954	40,120	46,799	60,387	83,164	69,316	51,236	51,528
3. Quality difference	%	39.2	39.2	39.2	39.2	39.2	39.2	39.2	76.3	76.3	76.3	85.3	85.3	85.3	85.3	85.3	85.3	85.3
4. Quality difference	VND/kg	54	313	276	855	1,595	2,704	3,517	8,510	11,733	14,462	34,222	39,919	51,510	70,939	59,126	43,704	43,953
5. Marketing margin	%	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
6. Marketing margin	VND/kg	1	4	3	11	20	33	44	21	29	36	47	55	71	98	81	60	61
7. Adjusted reference price (Par)	VND/kg	84	481	426	1,315	2,453	4,161	5,412	2,613	3,615	4,456	5,851	6,825	8,806	12,127	10,109	7,472	7,514
8. Average farm price (Pd)	VND/kg					1,700	3,000	3,870	4,245	4,670	5,492	5,761	5,985	8,879	11,722	9,705	7,576	6,750
9. Market price support (MPS)	VND bn					-102	-179	-141	312	233	226	-826	-1,041	-836	-961	-1,333	-949	-2,133
10. Market price support (MPS)	%					-30.7	-27.9	-28.5	61.8	29.2	23.2	-1.5	-12.3	-0.8	-3.3	-4.0	1.4	-10.2

Appendix Table 8: Calculation of MPS for groundnut

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	1000 tons	210.6	230	213	206	213	235	227	259	294	334	358	351	386	318	355	363	397
2. Reference price (Pfob)	VND/kg	78	375	357	1,807	3,888	6,093	5,717	4,662	6,403	7,314	7,558	6,405	6,413	8,227	7,619	7,188	7,426
3. Processing costs and marketing margin	VND/kg	26	126	120	609	1,312	2,055	1,928	1,573	2,160	2,467	2,549	2,161	2,163	2,775	2,570	2,425	2,505
4. Adjusted reference price (Par)	VND/kg	52	249	237	1,198	2,576	4,038	3,789	3,089	4,243	4,847	5,009	4,244	4,250	5,452	5,049	4,763	4,921
5. Average farm price (Pd)	VND/kg	38	135	700	1,650	1,584	1,983	2,005	2,556	2,850	3,580	4,394	4,620	4,991	5,156	4,600	4,853	4,400
6. Market price support (MPS)	VND bn	-3	-26	99	93	-211	-482	-404	-138	-410	-424	-220	132	286	-94	-159	32	-21
7. Market price support (MPS)	%	-26.9	-45.8	195.3	37.7	-38.5	-50.9	-47.1	-17.2	-32.8	-26.1	-12.3	8.8	17.4	-5.4	-8.9	1.9	-10.6

Appendix Table 9: Calculation of MPS for rubber

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	1000 tons	50	52	50	51	58	65	67	97	129	125	142	186	193	249	291	313	331
2. Reference price (Pfob)	VND/kg	142	646	597	2,642	5,906	7,909	9,152	8,225	10,955	15,023	14,431	11,461	8,850	7,724	8,600	7,937	9,051
3. Marketing margin	%	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
4. Marketing margin	VND/kg	9	40	37	164	366	490	567	510	679	931	895	710	549	479	533	492	561
5. Adjusted reference price (Par)	VND/kg	133	606	560	2,478	5,540	7,419	8,585	7,715	10,276	14,092	13,536	10,750	8,301	7,245	8,067	7,445	8,490
6. Average farm price (Pd)	VND/kg											11,713	13,041	11,071	10,094	9,118	7,686	12,000
7. Quality adjustment	%											16	16	16	16	16	16	16
8. Quality adjustment	VND/kg											1,874	2,087	1,771	1,615	1,459	1,230	1,920
9. Domestic price for (low quality) exported rubber	VND/kg											9,839	10,954	9,300	8,479	7,659	6,456	10,080
10. Market price support (MPS)	VND bn											-526	39	194	308	-118	-308	528
11. Market price support (MPS)	%											-27.3	1.9	12.0	17.0	-5.0	-13.3	18.7

Appendix Table 10: Calculation of MPS for black pepper

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	1000 tons	4	5	6	7	9	9	8	7	9	9	10.5	13	16	31	39	44	51
2. Reference price (Pfob)	VND/kg	578	3,040	1,866	5,372	10,422	10,900	7,685	10,141	18,160	24,052	20,367	31,930	56,588	54,963	50,566	23,575	21,432
3. Marketing margin	%	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9	13.9
4. Marketing margin	VND/kg	80	423	259	747	1,449	1,515	1,068	1,410	2,524	3,343	2,831	4,438	7,865	7,640	7,029	3,277	2,979
5. Adjusted reference price (Par)	VND/kg	498	2,617	1,607	4,625	8,973	9,385	6,617	8,731	15,636	20,709	17,536	27,492	48,723	47,323	43,537	20,298	18,453
6. Average farm price (Pd)	VND/kg	520	2,900	7,600	7,700	8,220	9,980	7,780	9,600	17,540	21,080	18,500	29,700	52,000	51,500	40,500		
7. Market price support (MPS)	VND bn	0.08	1	37	22	-6	5	9	6	17	3	10	28	52	129	-120		
8. Market price support (MPS)	%	4.4	10.8	372.9	66.5	-8.4	6.3	17.6	9.9	12.2	1.8	5.5	8.0	6.7	8.8	-7.0		

Appendix Table 11: Calculation of MPS for sugar

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
1. Total production	1000 tons	4,966	5,467	5,700	5,345	5,398	6,131	6,437	6,083	7,550	10,711	11,430	11,921	13,843	17,760	15,246	14,657
2. Reference price (Pcif)	VND/kg	53	240	232	1,141	2,526	3,176	3,371	3,123	3,790	4,324	4,372	2,337	2,405	2,257	2,970	3,859
3. Marketing margin	%	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
4. Marketing margin	VND/kg	3	14	14	68	152	191	202	187	227	259	262	140	144	135	178	231
5. Adjusted reference price (Par)	VND/kg	56	254	246	1,209	2,678	3,367	3,573	3,310	4,017	4,583	4,634	2,477	2,549	2,392	3,148	4,090
6. Average farm price (Pd)	VND/kg	73	363	436	1,042	969	1,647	2,132	2,326	2,568	3,004	13,932	11,654	11,557	10,685	8,868	15,773
7. Market price support (MPS)	VND bn	4	25	45	-33	-371	-422	-368	-234	-432	-666	4,421	4,534	5,169	6,106	3,630	7,106
8. Market price support (MPS)	%	30.4	42.9	77.2	-13.8	-63.8	-51.1	-40.3	-29.7	-36.1	-34.4	200.6	370.5	353.4	346.7	181.7	285.6

Appendix Table 12: Calculation of MPS for pig meat

	Unit	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1. Total production	1000 tons	605	628	658	665	729	716	820	878	958	1,007	1,052	1,154	1,228	1,318	1,409	1,515	1,654
2. Reference price (Pfob)	VND/kg	2,886	1,366	1,230	5,574	11,628	18,065	19,517	18,581	14,839	18,842	19,316	32,125	27,130	22,568	22,772	23,763	19,511
3. Marketing margin	%	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5
4. Marketing margin	VND/kg	621	294	264	1,199	2,500	3,884	4,196	3,995	3,190	4,051	4,153	6,907	5,833	4,852	4,896	5,109	4,195
5. Quality adjustment	%	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
6. Quality adjustment	VND/kg	362	171	155	700	1,460	2,269	2,451	2,334	1,864	2,367	2,426	4,035	3,407	2,835	2,860	2,985	2,450
7. Adjusted reference price (Par)	VND/kg	1,903	901	811	3,675	7,668	11,912	12,869	12,252	9,785	12,424	12,737	21,183	17,889	14,882	15,016	15,669	12,866
8. Average farm price (Pd)	VND/kg	84	323	1,700	3,230	3,045	5,489	5,536	7,203	7,761	11,206	11,157	10,132	10,412	12,020	10,412	9,728	13,562
9. Market price support (MPS)	VND bn	-1,106	-365	582	-307	-3,395	-4,637	-6,060	-4,481	-1,981	-1,283	-1,722	-12,862	-9,280	-3,859	-6,581	-9,107	1,057
10. Market price support (MPS)	%	-95.6	-64.3	108.6	-12.5	-60.5	-54.1	-57.2	-41.5	-21.0	-10.2	-12.8	-52.4	-42.0	-19.6	-31.0	-38.2	4.9

The following papers have been published so far:

No. 1	Ulrike Grote, Arnab Basu, Diana Weinhold	Child Labor and the International Policy Debate Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1998, pp. 47.
No. 2	Patrick Webb, Maria Iskandarani	Water Insecurity and the Poor: Issues and Research Needs Zentrum für Entwicklungsforschung (ZEF), Bonn, Oktober 1998, pp. 66.
No. 3	Matin Qaim, Joachim von Braun	Crop Biotechnology in Developing Countries: A Conceptual Framework for Ex Ante Economic Analyses Zentrum für Entwicklungsforschung (ZEF), Bonn, November 1998, pp. 24.
No. 4	Sabine Seibel, Romeo Bertolini, Dietrich Müller-Falcke	Informations- und Kommunikationstechnologien in Entwicklungsländern Zentrum für Entwicklungsforschung (ZEF), Bonn, January 1999, pp. 50.
No. 5	Jean-Jacques Dethier	Governance and Economic Performance: A Survey Zentrum für Entwicklungsforschung (ZEF), Bonn, April 1999, pp. 62.
No. 6	Mingzhi Sheng	Lebensmittelhandel und Kosumtrends in China Zentrum für Entwicklungsforschung (ZEF), Bonn, May 1999, pp. 57.
No. 7	Arjun Bedi	The Role of Information and Communication Technologies in Economic Development – A Partial Survey Zentrum für Entwicklungsforschung (ZEF), Bonn, May 1999, pp. 42.
No. 8	Abdul Bayes, Joachim von Braun, Rasheda Akhter	Village Pay Phones and Poverty Reduction: Insights from a Grameen Bank Initiative in Bangladesh Zentrum für Entwicklungsforschung (ZEF), Bonn, June 1999, pp. 47.
No. 9	Johannes Jütting	Strengthening Social Security Systems in Rural Areas of Developing Countries Zentrum für Entwicklungsforschung (ZEF), Bonn, June 1999, pp. 44.
No. 10	Mamdouh Nasr	Assessing Desertification and Water Harvesting in the Middle East and North Africa: Policy Implications Zentrum für Entwicklungsforschung (ZEF), Bonn, July 1999, pp. 59.
No. 11	Oded Stark, Yong Wang	Externalities, Human Capital Formation and Corrective Migration Policy Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 17.

No. 12	John Msuya	Nutrition Improvement Projects in Tanzania: Appropriate Choice of Institutions Matters Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 36.
No. 13	Liu Junhai	Legal Reforms in China Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 90.
No. 14	Lukas Menkhoff	Bad Banking in Thailand? An Empirical Analysis of Macro Indicators Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 38.
No. 15	Kaushalesh Lal	Information Technology and Exports: A Case Study of Indian Garments Manufacturing Enterprises Zentrum für Entwicklungsforschung (ZEF), Bonn, August 1999, pp. 24.
No. 16	Detlef Virchow	Spending on Conservation of Plant Genetic Resources for Food and Agriculture: How much and how efficient? Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1999, pp. 37.
No. 17	Arnulf Heuermann	Die Bedeutung von Telekommunikationsdiensten für wirtschaftliches Wachstum Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1999, pp. 33.
No. 18	Ulrike Grote, Arnab Basu, Nancy Chau	The International Debate and Economic Consequences of Eco-Labeling Zentrum für Entwicklungsforschung (ZEF), Bonn, September 1999, pp. 37.
No. 19	Manfred Zeller	Towards Enhancing the Role of Microfinance for Safety Nets of the Poor Zentrum für Entwicklungsforschung (ZEF), Bonn, October 1999, pp. 30.
No. 20	Ajay Mahal, Vivek Srivastava, Deepak Sanan	Decentralization and Public Sector Delivery of Health and Education Services: The Indian Experience Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2000, pp. 77.
No. 21	M. Andreini, N. van de Giesen, A. van Edig, M. Fosu, W. Andah	Volta Basin Water Balance Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 29.
No. 22	Susanna Wolf, Dominik Spoden	Allocation of EU Aid towards ACP-Countries Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 59.

No. 23	Uta Schultze	Insights from Physics into Development Processes: Are Fat Tails Interesting for Development Research? Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 21.
No. 24	Joachim von Braun, Ulrike Grote, Johannes Jütting	Zukunft der Entwicklungszusammenarbeit Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 25.
No. 25	Oded Stark, You Qiang Wang	A Theory of Migration as a Response to Relative Deprivation Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2000, pp. 16.
No. 26	Doris Wiesmann, Joachim von Braun, Torsten Feldbrügge	An International Nutrition Index – Successes and Failures in Addressing Hunger and Malnutrition Zentrum für Entwicklungsforschung (ZEF), Bonn, April 2000, pp. 56.
No. 27	Maximo Torero	The Access and Welfare Impacts of Telecommunications Technology in Peru Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2000, pp. 30.
No. 28	Thomas Hartmann-Wendels Lukas Menkhoff	Could Tighter Prudential Regulation Have Saved Thailand's Banks? Zentrum für Entwicklungsforschung (ZEF), Bonn, July 2000, pp. 40.
No. 29	Mahendra Dev	Economic Liberalisation and Employment in South Asia Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2000, pp. 82.
No. 30	Noha El-Mikawy, Amr Hashem, Maye Kassem, Ali El-Sawi, Abdel Hafez El-Sawy, Mohamed Showman	Institutional Reform of Economic Legislation in Egypt Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2000, pp. 72.
No. 31	Kakoli Roy, Susanne Ziemek	On the Economics of Volunteering Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2000, pp. 47.
No. 32	Assefa Admassie	The Incidence of Child Labour in Africa with Empirical Evidence from Rural Ethiopia Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2000, pp. 61.
No. 33	Jagdish C. Katyal, Paul L.G. Vlek	Desertification - Concept, Causes and Amelioration Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2000, pp. 65.

No. 34	Oded Stark	On a Variation in the Economic Performance of Migrants by their Home Country's Wage Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2000, pp. 10.
No. 35	Ramón Lopéz	Growth, Poverty and Asset Allocation: The Role of the State Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2001, pp. 35.
No. 36	Kazuki Taketoshi	Environmental Pollution and Policies in China's Township and Village Industrial Enterprises Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2001, pp. 37.
No. 37	Noel Gaston, Douglas Nelson	Multinational Location Decisions and the Impact on Labour Markets Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2001, pp. 26.
No. 38	Claudia Ringler	Optimal Water Allocation in the Mekong River Basin Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2001, pp. 50.
No. 39	Ulrike Grote, Stefanie Kirchhoff	Environmental and Food Safety Standards in the Context of Trade Liberalization: Issues and Options Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2001, pp. 43.
No. 40	Renate Schubert, Simon Dietz	Environmental Kuznets Curve, Biodiversity and Sustainability Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2001, pp. 30.
No. 41	Stefanie Kirchhoff, Ana Maria Ibañez	Displacement due to Violence in Colombia: Determinants and Consequences at the Household Level Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2001, pp. 45.
No. 42	Francis Matambalya, Susanna Wolf	The Role of ICT for the Performance of SMEs in East Africa – Empirical Evidence from Kenya and Tanzania Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2001, pp. 30.
No. 43	Oded Stark, Ita Falk	Dynasties and Destiny: On the Roles of Altruism and Impatience in the Evolution of Consumption and Bequests Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2001, pp. 20.
No. 44	Assefa Admassie	Allocation of Children's Time Endowment between Schooling and Work in Rural Ethiopia Zentrum für Entwicklungsforschung (ZEF), Bonn, February 2002, pp. 75.

No. 45	Andreas Wimmer, Conrad Schetter	Staatsbildung zuerst. Empfehlungen zum Wiederaufbau und zur Befriedung Afghanistans. (German Version) State-Formation First. Recommendations for Reconstruction and Peace-Making in Afghanistan. (English Version) Zentrum für Entwicklungsforschung (ZEF), Bonn, April 2002, pp. 27.
No. 46	Torsten Feldbrügge, Joachim von Braun	Is the World Becoming A More Risky Place? - Trends in Disasters and Vulnerability to Them – Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2002, pp. 42
No. 47	Joachim von Braun, Peter Wobst, Ulrike Grote	"Development Box" and Special and Differential Treatment for Food Security of Developing Countries: Potentials, Limitations and Implementation Issues Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2002, pp. 28
No. 48	Shyamal Chowdhury	Attaining Universal Access: Public-Private Partnership and Business-NGO Partnership Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2002, pp. 37
No. 49	L. Adele Jinadu	Ethnic Conflict & Federalism in Nigeria Zentrum für Entwicklungsforschung (ZEF), Bonn, September 2002, pp. 45
No. 50	Oded Stark, Yong Wang	Overlapping Zentrum für Entwicklungsforschung (ZEF), Bonn, August 2002, pp. 17
No. 51	Roukayatou Zimmermann, Matin Qaim	Projecting the Benefits of Golden Rice in the Philippines Zentrum für Entwicklungsforschung (ZEF), Bonn, September 2002, pp. 33
No. 52	Gautam Hazarika, Arjun S. Bedi	Schooling Costs and Child Labour in Rural Pakistan Zentrum für Entwicklungsforschung (ZEF), Bonn October 2002, pp. 34
No. 53	Margit Bussmann, Indra de Soysa, John R. Oneal	The Effect of Foreign Investment on Economic Development and Income Inequality Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2002, pp. 35
No. 54	Maximo Torero, Shyamal K. Chowdhury, Virgilio Galdo	Willingness to Pay for the Rural Telephone Service in Bangladesh and Peru Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2002, pp. 39
No. 55	Hans-Dieter Evers, Thomas Menkhoff	Selling Expert Knowledge: The Role of Consultants in Singapore´s New Economy Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2002, pp. 29

No. 56	Qiuxia Zhu Stefanie Elbern	Economic Institutional Evolution and Further Needs for Adjustments: Township Village Enterprises in China Zentrum für Entwicklungsforschung (ZEF), Bonn, November 2002, pp. 41
No. 57	Ana Devic	Prospects of Multicultural Regionalism As a Democratic Barrier Against Ethnonationalism: The Case of Vojvodina, Serbia´s "Multiethnic Haven" Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2002, pp. 29
No. 58	Heidi Wittmer Thomas Berger	Clean Development Mechanism: Neue Potenziale für regenerative Energien? Möglichkeiten und Grenzen einer verstärkten Nutzung von Bioenergieträgern in Entwicklungsländern Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2002, pp. 81
No. 59	Oded Stark	Cooperation and Wealth Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2003, pp. 13
No. 60	Rick Auty	Towards a Resource-Driven Model of Governance: Application to Lower-Income Transition Economies Zentrum für Entwicklungsforschung (ZEF), Bonn, February 2003, pp. 24
No. 61	Andreas Wimmer Indra de Soysa Christian Wagner	Political Science Tools for Assessing Feasibility and Sustainability of Reforms Zentrum für Entwicklungsforschung (ZEF), Bonn, February 2003, pp. 34
No. 62	Peter Wehrheim Doris Wiesmann	Food Security in Transition Countries: Conceptual Issues and Cross-Country Analyses Zentrum für Entwicklungsforschung (ZEF), Bonn, February 2003, pp. 45
No. 63	Rajeev Ahuja Johannes Jütting	Design of Incentives in Community Based Health Insurance Schemes Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2003, pp. 27
No. 64	Sudip Mitra Reiner Wassmann Paul L.G. Vlek	Global Inventory of Wetlands and their Role in the Carbon Cycle Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2003, pp. 44
No. 65	Simon Reich	Power, Institutions and Moral Entrepreneurs Zentrum für Entwicklungsforschung (ZEF), Bonn, March 2003, pp. 46
No. 66	Lukas Menkhoff Chodechai Suwanaporn	The Rationale of Bank Lending in Pre-Crisis Thailand Zentrum für Entwicklungsforschung (ZEF), Bonn, April 2003, pp. 37

No. 67	Ross E. Burkhart Indra de Soysa	Open Borders, Open Regimes? Testing Causal Direction between Globalization and Democracy, 1970-2000 Zentrum für Entwicklungsforschung (ZEF), Bonn, April 2003, pp. 24
No. 68	Arnab K. Basu Nancy H. Chau Ulrike Grote	On Export Rivalry and the Greening of Agriculture – The Role of Eco-labels Zentrum für Entwicklungsforschung (ZEF), Bonn, April 2003, pp. 38
No. 69	Gerd R. Rücker Soojin Park Henry Ssali John Pender	Strategic Targeting of Development Policies to a Complex Region: A GIS-Based Stratification Applied to Uganda Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2003, pp. 41
No. 70	Susanna Wolf	Private Sector Development and Competitiveness in Ghana Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2003, pp. 29
No. 71	Oded Stark	Rethinking the Brain Drain Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2003, pp. 17
No. 72	Andreas Wimmer	Democracy and Ethno-Religious Conflict in Iraq Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2003, pp. 17
No. 73	Oded Stark	Tales of Migration without Wage Differentials: Individual, Family, and Community Contexts Zentrum für Entwicklungsforschung (ZEF), Bonn, September 2003, pp. 15
No. 74	Holger Seebens Peter Wobst	The Impact of Increased School Enrollment on Economic Growth in Tanzania Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2003, pp. 25
No. 75	Benedikt Korf	Ethnicized Entitlements? Property Rights and Civil War in Sri Lanka Zentrum für Entwicklungsforschung (ZEF), Bonn, November 2003, pp. 26
No. 76	Wolfgang Werner	Toasted Forests – Evergreen Rain Forests of Tropical Asia under Drought Stress Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2003, pp. 46
No. 77	Appukuttannair Damodaran Stefanie Engel	Joint Forest Management in India: Assessment of Performance and Evaluation of Impacts Zentrum für Entwicklungsforschung (ZEF), Bonn, October 2003, pp. 44

No. 78	Eric T. Craswell Ulrike Grote Julio Henao Paul L.G. Vlek	Nutrient Flows in Agricultural Production and International Trade: Ecology and Policy Issues Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 62
No. 79	Richard Pomfret	Resource Abundance, Governance and Economic Performance in Turkmenistan and Uzbekistan Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 20
No. 80	Anil Markandya	Gains of Regional Cooperation: Environmental Problems and Solutions Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 24
No. 81	Akram Esanov, Martin Raiser, Willem Buiter	Gains of Nature's Blessing or Nature's Curse: The Political Economy of Transition in Resource-Based Economies Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 22
No. 82	John M. Msuya Johannes P. Jütting Abay Asfaw	Impacts of Community Health Insurance Schemes on Health Care Provision in Rural Tanzania Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 26
No. 83	Bernardina Algieri	The Effects of the Dutch Disease in Russia Zentrum für Entwicklungsforschung (ZEF), Bonn, January 2004, pp. 41
No. 84	Oded Stark	On the Economics of Refugee Flows Zentrum für Entwicklungsforschung (ZEF), Bonn, February 2004, pp. 8
No. 85	Shyamal K. Chowdhury	Do Democracy and Press Freedom Reduce Corruption? Evidence from a Cross Country Study Zentrum für Entwicklungsforschung (ZEF), Bonn, March2004, pp. 33
No. 86	Qiuxia Zhu	The Impact of Rural Enterprises on Household Savings in China Zentrum für Entwicklungsforschung (ZEF), Bonn, May 2004, pp. 51
No. 87	Abay Asfaw Klaus Frohberg K.S.James Johannes Jütting	Modeling the Impact of Fiscal Decentralization on Health Outcomes: Empirical Evidence from India Zentrum für Entwicklungsforschung (ZEF), Bonn, June 2004, pp. 29

No. 88	Maja B. Micevska Arnab K. Hazra	The Problem of Court Congestion: Evidence from Indian Lower Courts Zentrum für Entwicklungsforschung (ZEF), Bonn, July 2004, pp. 31
No. 89	Donald Cox Oded Stark	On the Demand for Grandchildren: Tied Transfers and the Demonstration Effect Zentrum für Entwicklungsforschung (ZEF), Bonn, September 2004, pp. 44
No. 90	Stefanie Engel Ramón López	Exploiting Common Resources with Capital-Intensive Technologies: The Role of External Forces Zentrum für Entwicklungsforschung (ZEF), Bonn, November 2004, pp. 32
No. 91	Hartmut Ihne	Heuristic Considerations on the Typology of Groups and Minorities Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2004, pp. 24
No. 92	Johannes Sauer Klaus Frohberg Heinrich Hockmann	Black-Box Frontiers and Implications for Development Policy – Theoretical Considerations Zentrum für Entwicklungsforschung (ZEF), Bonn, December 2004, pp. 38

ISSN: 1436-9931

The papers can be ordered free of charge from:

Zentrum für Entwicklungsforschung (ZEF)
Center for Development Research
Walter-Flex-Str. 3
D – 53113 Bonn, Germany

Phone: +49-228-73-1861
Fax: +49-228-73-1869
E-Mail: zef@uni-bonn.de
http://www.zef.de