Special products in agricultural trade rules: implications for development

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Through a Philippine case study,[1] we examine the costs and benefits of potentially applying a World Trade Organization proposal to self-declare special products (SPs) that have more flexible terms for market access commitments based on the criteria of food security, livelihood security and rural-development needs. Using standard trade analysis, we measure the net economic costs that are incurred when no tariff cuts are implemented for a few SPs. The result may put to question how a society with less available resources can be made better off by adopting such a policy stance. Nonetheless, when analysing the profiles of sectors that might be affected, and taking into account the development objectives that are hoped to be achieved, it appears that maintaining tariff levels on select products may well be a last short-term and countervailing resort so the Philippines can prevent political destabilisation, which can arise when the poor are threatened to be marginalised from more open markets. There seems to be no available alternative policy instrument that can shield the agriculturally dependent poor from being worse off, while exporting countries continue to distort world commodity prices with subsidies.

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Introduction

The impasse in the Doha Round of talks in the World Trade Organization (WTO) underscores the divergence in views of contracting parties on how the global trade regime should proceed. While the ultimate goal of the current WTO negotiations is to agree on a trade-reform process that will improve the living standards of people worldwide (WTO 2001), there are major disagreements on the modalities for carrying out trade reform and disagreements on the meaning of the end goal itself (that is, development). One view is that trade liberalisation promotes economic growth, which can help alleviate poverty in the long run (Winters et al 2004).[2] As the saying goes, 'A rising tide lifts all boats'. However, when people are marginalised in the process of trade reform, as in cases in which cheap competing imports threaten their livelihood, critics of free trade are led to the perception that liberalising trade is good only for those with market power and is especially bad for the poor.

In the WTO negotiations, one of the controversial proposals is that emanating from a group of over 40 developing countries calling themselves the Alliance for Special Products and Special Safeguard Measures[3] (Alliance for SP and SSM) or the G-33.[4] A key feature of this proposal is for developing countries to self-designate a number of agricultural special products (SPs) that have more flexible terms for market access commitments, such as tariffs and tariff-rate quotas. The criteria for determining SPs are proposed to be based on food security, livelihood security and rural development needs. There is disagreement between developing countries and industrialised countries and even among developing countries over the modalities for SPs. Some countries argue against flexibility for SPs, because it may affect adversely the exports of poor farmers. Some countries are concerned that flexibility for SPs may be abused and could negate the benefits from trade. However, the proponents for flexible terms

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2　　In their survey of over a hundred studies, Winters et al (2004) seem to presuppose that trade liberalisation will be poverty-alleviating in the long run and there is no evidence that it will generally increase poverty or vulnerability. They caution, however, that there can be no unconditional guarantees and they cannot be sure that static and micro-economic effects of liberalisation will always be beneficial for the poor. Outcomes will be on a case-to-case basis.

3　　The proposal of the Alliance for Special Products and Special Safeguard Measures, in addition to the suggestion to self-declare special products, also advocates improved recourse against import surges through special safeguard mechanisms. In this paper, we only discuss the special products proposal.

4　　The G-33 is comprised of Antigua and Barbuda, Barbados, Belize, Benin, Botswana, China, Congo, Côte d'Ivoire, Cuba, Dominican Republic, Grenada, Guyana, Haiti, Honduras, India, Indonesia, Jamaica, Kenya, Republic of Korea, Mauritius, Madagascar, Mongolia, Mozambique, Nicaragua, Nigeria, Pakistan, Panama, Peru, Philippines, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Senegal, Sri Lanka, Suriname, Tanzania, Trinidad and Tobago, Turkey, Uganda, Venezuela, Zambia and Zimbabwe.

for SP market conditions argue that such flexibilities are necessary to attune the selection of SPs to their domestic-policy goals and development goals (G-33 et al 2006).

The concept of special products seems to be supported by many non-governmental organisations, including human rights advocates[5] and those agencies concerned about development issues (for example, Polaski 2006; OXFAM 2005). Given SPs for developing countries, Polaski (2006) finds globally that income gains are reduced only slightly when developing countries are allowed to forgo the liberalisation of their own agricultural sectors. However, Ivanic and Martin (2006) observe that Polaski's finding is largely a consequence of model specification in which agricultural reform contributes only about 5 per cent of total gains from full trade reform. This result is different completely from other studies in which agricultural reform contributes two-thirds of these gains.[6] Anderson et al (2006), for example, conclude that exemption from liberalisation for just a few sensitive products[7] and special products will be undesirable because of the reduction in the gains from reform and the diversion of resources into, and not away from, enterprises in which countries have the least comparative advantage. On the other hand, Taylor and von Arnim (2006) critique the computable general equilibrium (CGE) models used widely by the World Bank (for example, Anderson and Martin 2006) and point out that these models measure incorrectly the gains of trade liberalisation, given problematic assumptions about elasticities, exchange rates and macro causality. By presenting alternative and more plausible modeling assumptions (for example, lower trade-elasticity assumptions than the models used by the World Bank), Taylor and Arnim (2006) show how sub-Saharan Africa can face welfare losses with trade liberalisation even in an otherwise optimistic situation that rules out all other macroeconomic shocks.

With poverty reduction as the widely accepted and central focus of development efforts, a major international research project of the World Bank (Hertel and Winters 2006) investigates the poverty impacts of a potential Doha Development Agenda (DDA). A major finding of the project is that allowing minimal tariff cuts for just a few special and sensitive products can virtually eliminate global poverty reduction due to the DDA. Poverty impacts of the DDA were estimated using a global-

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5   See, for example, various statements and papers of human rights groups within the international network of economic, social and cultural rights.

6   Ivanic and Martin (2006) refer to Anderson and Martin (2006) for the listing of studies that specifies the contribution of agricultural trade reform as two-thirds of total gains.

7   Sensitive products are another category of products that even developed countries can invoke to have more flexible tariff reduction commitments.

modeling framework incorporating the most recent econometric evidence on supply and demand elasticities that focus attention on agricultural food markets crucial to the assessment. The DDA global-trade impacts were then used as a basis for the assessment of national poverty impacts on household groups of 10 individual countries (that is, Bangladesh, Brazil, Cameroon, China, Indonesia, Mexico, Mozambique, Philippines, Russia and Zambia). Of all the countries taken into consideration, the Philippines evolved from being a net agricultural exporter to a net agricultural importer in 1994. Thus, potential Doha reforms will not be favourable for Philippine agriculture, and this effect will be more pronounced under full liberalisation (Cororaton et al 2005). This result is different from that of other focus economies within the World Bank research project. Because of the relatively high protection the Philippines has for its agriculture, full liberalisation is reported to result in a contraction of the agricultural sector and an increase in rural poverty. The worsening of rural poverty is offset by the reduction of poverty due to increased wages in the urban sector. As a consequence, there is a slight drop in the national poverty headcount. Ivanic and Martin (2006) focus the analysis of Hertel and Winters (2006) by looking specifically at the poverty impacts of potential SPs on a number of low-income countries in different regions that have different trade patterns and different relationships between poverty and the agriculture sector. Ivanic and Martin (2006) find that if the SP proposal were to raise the prices of staple foods produced by subsistence farmers, large increases in poverty would result that could be sufficient in some cases to undo decades of developmental progress. However, they note that the proposed SPs will not increase poverty in the short term, since many of the targeted SPs are exportables for which tariffs cannot raise prices. Further, recent WTO proposals require very few cuts in agricultural tariffs of poor countries.

In this article, we use a partial-equilibrium framework to analyse the welfare effects of the SP proposal for a particular proponent country, the Philippines. We consider only the effects of potentially not allowing tariff reductions on a few special products (that is, corn, poultry meat and pork).[8] Specifically, we estimate empirically the magnitude of potential costs and benefits of maintaining tariffs on the SPs of corn, poultry meat and pork through standard trade analysis. We also examine the characteristics of sectors that will be affected and discuss implications for development objectives under the notion of a scientific tariff (Johnson 1960) and a framework in which positive externalities may be associated with agricultural production.

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8   We do not account for the effects of no tariff reduction on agricultural export interests in developing countries that may likewise adopt the SP proposal.

In the discussion that follows, we provide a backdrop of the G-33 proposal to self-designate special products in agriculture trade rules. We then analyse the SP proposal as it may apply to the Philippine case. We conclude by drawing implications for development.

The special-products proposal and potential modalities

The draft of possible WTO modalities in agriculture (WTO 2006) acknowledges the proposal of developing countries to self-designate special products that may enjoy more flexible market access commitments. The proposal seeks to address non-trade concerns in agriculture (that is, food security, livelihood security, rural development) and to advocate special and differential treatment for developing countries. It is based on the perception that there exists an imbalance and unfairness in the current WTO trade regime, which legitimises trade-distorting export competition and domestic-support measures to the extreme prejudice of developing-country trade and developmental interests in domestic and international markets. It is in this context that the G-33 demands a correction of the imbalance. It demands the need to provide developing countries more flexibility when applying tariffs. The G-33 claims that tariffs are the only available instruments of defense against subsidised competing imports. The sentiment that the lopsided agricultural trade agreement has had an adverse affect on the development of poor countries is evident in the Statement and Declaration of the G-33 in the Formal Special Session of the WTO Committee on Agriculture prior to the Ministerial Conference in Cancun:

> Unbridled trade liberalisation that has singularly and mistakenly focused only on tariff elimination and blind to other equally important elements and pillars not to mention our development needs, has no human face and is fast dismantling, rather than helping us build our launching pads to economic and social development — the true intent of the multilateral trading system. [Alliance for SP and SSM 2003.]

Such an assertion seems to resonate with the viewpoint of some civil society groups[9] that have put forth their discontents publicly about the impact of the present WTO trade regime.

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9   See, for example, Third World Network (2001) and OXFAM (2005).

In support of WTO negotiations, the Food and Agriculture Organization (FAO)[10] presents several indicators that may be considered when determining which items to designate as special products in order to meet the non-trade concerns of food security, livelihood security and rural development. These indicators are:

(1) share of production of the product in total agricultural production (rural development);
(2) share of consumption of the product in total apparent agricultural consumption (food security);
(3) share of domestic consumption in domestic production of the product (food security);
(4) share of employment of the product in the total agricultural labor force, or in total agriculture employment (livelihood security). [FAO 2002.]

The G-33 suggests that special products should be self-selected by national governments according to their specific local needs. There are also proposals within the WTO through which a country can negotiate the number of special products, or through which a country can agree on a common basis for special-product eligibility to minimise the abuse of the SP provision. How special products will be treated must also be further negotiated (WTO 2006).

The treatment of special products depends on the negotiations about tariff reduction and other market access commitments for the remaining agricultural products, including those products classified as sensitive products. Reductions on the Uruguay Round Agreement on Agriculture (URAA) bound tariffs will be made through a tiered formula that takes into account the different tariff structures of the various WTO members. Sensitive products, another category of products that even the developed countries could invoke, may have lesser tariff cuts. Like special products, the selection and treatment of sensitive products is still to be negotiated (WTO 2006).

Welfare effects of invoking special products: a standard trade analysis of the Philippine case

Since 1994, the Philippines has remained a net importer of agricultural products. The contribution of agriculture to its gross domestic product (GDP) is about 19 per cent. Approximately 40 per cent of the total Filipino population is in rural areas, where the majority of the poor are concentrated and where agriculture is the main source of economic activity. Some 38 per cent of the total labor force is employed in agriculture. Therefore, displacement of key agricultural sectors poses a threat to the poor.

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10   The Food and Agriculture Organization (FAO) of the United Nations leads international efforts to defeat hunger. Serving both developed and developing countries, FAO acts as a neutral forum where all nations meet as equals to negotiate agreements and debate policy.

The Philippines is one of the developing countries that clamors for special trade rules for its key agricultural products. In this article, we identify potential SPs for the Philippines based on the FAO-suggested SP-selection criteria referred to earlier. Also, we note there may be a range of other possible criteria that could be negotiated to provide direction for which products may have more flexible market access commitments.[11] Using the FAO-suggested formulae, the top five products most important for rural development in the Philippines are rice, chicken, swine, coconut and corn. The respective value shares of production of rice, chicken, swine, coconut and corn to total agricultural production are 21 per cent, 15 per cent, 14 per cent, 10 per cent and 7 per cent, respectively (BAS 2005). Meanwhile, crops usually considered important for food security are the staples. Rice is the primary Filipino staple, while the preferred staple of about one-seventh of the population is white corn.[12] Based on production and trade data over the 2002 to 2004 period, the Philippines averages to be 91 per cent self-sufficient in rice and can be considered 100 per cent self-sufficient in white corn, since white corn is not being imported (FAOSTAT 2005). The food products with the biggest volume share in the Philippine per-capita mean food-consumption basket include rice (35 per cent), fish (12 per cent), vegetables (10 per cent), fruit (7 per cent) and corn (4 per cent) (FNRI 1993). In 2002, the production of rice, corn and coconut alone provided livelihood to 43 per cent, 18 per cent and 11 per cent, respectively, of the total persons employed in Philippine agriculture (NSO 2002).

The top products that could be eligible as special products for the Philippines are rice and corn. It is not surprising for the Philippines to seek some form of WTO special treatment for rice. In the URAA, only Japan, Korea and the Philippines invoked to retain its quantitative restriction (QR) on rice under Annex 5 of the URAA.

When examining the potential effects of lifting the QR on rice imports in the Philippines, Cororaton and Cockburn (2004) find that opening up the Philippine rice market by lifting the QR on imports could worsen rural poverty in the Philippines. They infer that the lifting of the QR on rice imports will worsen unemployment because of the expected surge in rice imports. The negative-income effects in household groups, for which the problem of poverty is more severe, will outweigh the drop in consumer prices. Their study also reveals that rice-policy reform in the Philippines would worsen income inequality to the detriment of the poor.[13] Further,

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11   See draft-possible modalities in agriculture (WTO 2006).

12   Some 12 million Filipinos are said to prefer white corn as their staple food (Velasco and Cabanilla 2003).

13   The study specifies and calibrates an agriculture-focused computable general equilibrium model to a set of actual data; simulates the lifting of the QR on rice on consumer prices and income; and applies these results to a set of individual household data obtained from a national food, income and expenditure survey to compute the poverty and income distribution effects.

Cororaton and Cockburn (2004) examine a countervailing policy of instituting a 50 per cent price subsidy on fertiliser. The fertiliser subsidy reverses the negative effects of the rice-trade policy reform on poverty and income distribution for all household groups. Other policy options suggested to be explored by Cororaton and Cockburn (2004) are those measures with cost-saving effects that include intensification of the use of high-yielding rice varieties; provision of access to irrigation; and improvement of farm-to-market roads.[14]

This article focuses on the integrated welfare impact of protecting the corn–swine–chicken nexus. Next to rice, yellow corn is the most significant SP crop identified when following the WTO/SP criteria. First, we analyse the implication of having yellow corn as a Philippine special product that is a key input of mixed feeds used by the swine and chicken sectors. (Historically, Philippine yellow-corn production has not been able to meet local demand.) We then examine the subsequent welfare effects of designating pork and chicken meat as special products. The combined share of chicken-meat production and swine production to the value of total Philippine agricultural production is 30 per cent, which contrasts to that of corn production at 7 per cent. Trade protection of corn, pork and chicken meat in the Philippines creates tension between producers and users of these products, and this requires a balanced stance in the actual implementation of tariff policies.[15] (The economic model used in the analysis that follows is described in detail in the appendix beginning on p 195.)

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14   Another study on the issue of de-protecting staples is the case of Morocco. Ravallion and Lokshin (2004) find that de-protecting cereals, Morocco's staple, makes the rural poor worse off on average, which contradicts generalisations that have been made in the past that the rural poor of Morocco tend to be net consumers of grain, and hence gainers from trade reform. While the majority of Morocco's poor are net consumers, on balance the welfare impacts of de-protecting cereals are negative. Having estimated welfare impacts of the trade reform across 5000 sampled households, Ravallion and Lokshin (2004) identify specific types of households whose consumption and production behavior have made them particularly vulnerable to the impact of trade reform that is suggestive of targeting priorities for compensatory programs. However, the finding that there is also a large share of unexplained variance in impacts highlights the limitation of targeting based on readily observable indicators. The Ravallion and Lokshin (2004) study suggests that self-targeting mechanisms may also be needed.

15   When corn tariffs were increased prior to the WTO implementation period, David (1993), for example, argues that the proposed higher tariffs and longer adjustment period will not only be against the interests of the country's economic recovery and of consumers, but also against the short-term and long-term interests of the corn–livestock sector itself.

Costs and benefits of maintaining tariffs on special products

Corn tariffs

We estimate the potential magnitude and distribution of the costs and benefits among producers, consumers and the Philippine Government of maintaining the 2003 corn tariff. We adopt a small-country comparative-static partial-equilibrium model focusing on the Philippine yellow-corn market.[16] We use a scenario in which the Philippines and the rest of the world do not engage in trade reform beyond the 2003 policies. Corn imports in the Philippines are subject to an in-quota tariff of 35 per cent on the cost, insurance and freight (CIF) price. In excess of the tariff rate quota, a 50 per cent tariff is applied.[17] (In 1996, the in-quota rate for corn imports was 50 per cent and the out-quota rate was 100 per cent.) While the government had a corn price support of six pesos per kilogram, no corn was procured from 2000 to 2004, when commercial traders offered a higher purchase price. Given the Philippine Government's fiscal constraints, increasing the corn price support is an unattractive option. Meanwhile, other inputs to livestock and poultry feeds, considered as corn substitutes, have lower tariff rates: wheat used as feeds (7 per cent — vis-a-vis food-grade wheat at 3 per cent, barley at 10 per cent, rye at 10 per cent, oats at 10 per cent, sorghum at 10 per cent and manioc at 45 per cent).

In Table 1 (p 199), we summarise the welfare effects of maintaining the 35 per cent tariff on corn imports vis-a-vis the case of a 0 per cent tariff. Expectedly, the tariff protection incurs a cost in the form of net welfare benefits forgone by society. Depending on the price elasticity of supply and demand, our calculation indicates that the cost of protection can range from P828 million to P1.7 billion annually (from about US$16 million to US$33 million),[18] which is about 0.22 per cent of the gross value added (GVA) in Philippine agriculture and fisheries in 2004. The tariff-free price of yellow corn is estimated at P6.81 per kilogram, which is the CIF price average of

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16 The Philippine corn crop may be categorised into white corn and yellow corn. Yellow corn is being imported primarily in view of the shortfall to meet the demand of the feed, livestock and poultry industries. Corn imports are in the form of maize seed (1 per cent tariff), popcorn (1 per cent tariff) and other corn, which is the type used for feed (35 per cent in-quota, 50 per cent out-quota). As a special product, yellow corn is rationalised here as one that meets the livelihood-security and rural-development criteria of the WTO.

17 Unlike in a number of countries where a binding overhang on market access commitments in agriculture is prevalent, the Philippines' applied tariffs on corn are also the bound rates.

18 The lower and upper bounds of the cost of protection assume a +/-0.5 and +/-1.0 price elasticity of supply and demand, respectively.

yellow corn imports from 2001 to 2003. Applying a 35 per cent tariff on the CIF yellow-corn price translates to P9.19 per kilogram. Annually, Filipino corn producers may retain their benefits from the status quo by an amount of P5.3 billion to P5.7 billion (about US$102 million to US$110 million, or 0.77 per cent of 2004 GVA in agriculture and fisheries);[19] the government continues to earn revenue approximately in the amount of P547 million from import tariffs (about US$11 million or 0.7 per cent of 2004 GVA in agriculture and fisheries); while corn users (that is, feed, poultry and livestock industries) lose about P7 billion to P7.5 billion (about US$135 million to US$144 million, or 1.02 per cent of 2004 GVA in agriculture and fisheries). Note that these estimates are understated if imports exceed the 2004 tariff quota of 216,900 metric tons. If the boom in local corn production will be sustained, however, future importations over the quota may be less likely.[20] During the past implementation period of WTO commitments from 1995 to 2003, the corn tariff-rate quota was fully utilised only in 2002, while the rest of the annual tariff-rate quota utilisation rates ranged from 48 per cent to 99 per cent (Department of Agriculture 2005b).

Chicken meat and pork tariffs

It is likely that chicken meat and pork will also be identified as Philippine special products in view of their significance to rural development and to compensate for maintaining the tariff on corn, one of the major inputs for chicken and swine production. We analyse a scenario in which tariffs are also maintained for pork and chicken meat. If the current tariffs are maintained, chicken-meat imports will continue to be levied a 40 per cent rate, while pork imports will be applied a 30 per cent in-quota rate and 40 per cent out-quota rate. Similarly, we estimate the cost of protecting the chicken and swine industries through the current in-quota tariff levels on their meat products and when corn tariffs are maintained. Results of our calculations are shown in Tables 2 and 3 (pp 200–01). The combined net loss to society from the trade protection on chicken meat and pork is P3 billion to P6 billion (or US$58 million to US$115 million, which is about 0.81 per cent of the 2004 GVA in agriculture and fisheries). Our model suggests that in comparison to a free-trade

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19   A common argument is that agricultural producers in poor countries are net consumers of their produce. Thus, higher prices as a result of tariff protection can also hurt them. This argument is not applicable in our corn example because what we are examining is yellow corn, which is not for food-corn consumption; rather, it is used as feed inputs of corn for other sectors.

20   The Philippine Department of Agriculture reports a record corn production of 5.47 million tons in 2004, 18.6 per cent higher than it was in the previous year. The boost in production is attributed to the encouraging price of corn compared to previous years, good weather conditions and timely field-support services in terms of policy, marketing and technology (Department of Agriculture 2005a).

scenario, the corresponding tariffs imposed on chicken meat and pork imports will result in net deadweight losses to society, with losses incurred by the pork-consuming and chicken-meat-consuming public, meat processors and food establishments. Pork and chicken producers retain their benefits from trade protection of their products, amounting to an upper-bound value of P22.5 billion (P16 billion (US$308 million) for hog raisers and P6.5 billion (US$125 million) for broiler producers). The Philippine Government continues to generate revenue of about P292 million (US$6 million) from pork-meat and chicken-meat imports.

With the current levels of tariff protection on their output, hog and chicken raisers are more than adequately compensated for the tariff protection on corn, which is a key feed ingredient. The producer gain that the swine and chicken sectors enjoy jointly with the tariffs on their output is triple that of the consumer benefits they forgo from a 35 per cent tariff on their corn inputs. Our estimates also indicate how the cost of protection for one sector can be magnified when the effect of border protection ripples through other interlinked sectors.

In Table 4 (p 202), we summarise the direction of welfare gains or losses that stakeholders will incur under two extreme trade-policy scenarios: Scenario 1 is the impact on Philippine stakeholders of identifying corn, pork and chicken meat as special products while maintaining existing tariffs; and Scenario 2 is full liberalisation. Clearly, pork and poultry-meat consumers, as well as meat-processing industries, lose in terms of forgone benefits when tariffs on corn, pork and poultry meat are maintained. Society incurs net costs from the border protection of special products. On the other hand, when 0 per cent tariffs are applied, society can achieve net economic gains. However, the ultimate losers will be the producers of corn, pork and poultry meat.[21]

Characteristics of affected sectors
We now analyse the characteristics of the firms and workers of the affected sectors to determine if those who might be affected by trade policies are poor, or are likely to

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21   It is possible that the gain to pork and poultry producers from free trade in corn may outweigh the losses they incur from de-protecting pork and poultry meat. At the current tariff levels, our case estimates show that pork and poultry producers will lose more from lifting the border protection on their output than they will lose on the amount they can gain from de-protecting corn, which is a primary input to pork and poultry production.

become poor. Policies aimed at the poor are widely accepted to be the key to achieving development goals. Also, we examine the impact of trade policies on government revenue.[22]

Corn producers

Filipino corn producers are predominantly small and are of a semi-subsistence nature, with average net returns per hectare of P4026 from growing yellow corn (BAS 2002). Assuming that corn is grown twice a year, the estimated annual income from a three-hectare farm is about P24,156. If a corn-farming household has no other source of income apart from growing corn, its income will be only one-third of the poverty threshold of a family of six members![23] There are about 1.7 million people employed by the corn sector, which is 18 per cent of the total Filipino agricultural workforce. In 2000, agriculture's contribution to total poverty was 61.3 per cent (Balisacan 2003). The poverty profile of corn farmers seems to suggest that there may be a need for government to ensure that poor corn farmers are not made worse off by a contraction in demand or by falling prices on their produce in view of cheap competing imports. Over the 1995 to 2004 implementation period of WTO commitments in which a 35 per cent in-quota rate was charged on yellow-corn imports, the largest national average farmgate-price reduction was in 1999 at 6 per cent, which was a change from P5.81/kg in 1998 to P5.45 in 1999. Over the last 10 years, decreases in the farmgate price occurred in four years, while the largest price increases were in 1995 (31 per cent) and in 2004 (30 per cent).

In terms of soil suitability, some 6.5 million hectares in the Philippines can be classified as highly suitable for corn production (Velasco and Cabanilla 2003).

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22   Such an analytical approach draws from the framework suggested by Winters et al (2004) and McCulloch et al (2001) that traces the static impact of trade policies through the price mechanism. In this section, we draw inferences on how trade policies might affect the poor based on national statistics and existing studies that provide information on the profiles of the sectors that might be affected. Further, we assume that the price effect of the tariff will likely be passed on to poor users/consumers and that the poor are not able to cope with large price shocks.

23   The 2003 per capita poverty threshold was P12,267 (NSCB 2005). Based on a 1990 International Food Policy Research Institute (IFPRI) survey, a typical Filipino corn household has six members. Sample farmers in Isabela, Nueva Viscaya, Davao and South Cotabato cultivate three hectares on average (Mendoza and Rosegrant 1995). We do not have information on other sources of income corn farmers may have. We might be using a strong assumption that the income corn farmers derive from farming is their sole income source.

However, only 1.5 to 2 million hectares in the Philippines are physically planted to corn. It is an issue why corn has not been widely planted despite a shortage of supply. The basic problem is that the yield for corn in the Philippines is low (currently at 3.3 metric tonnes per hectare), in spite of the widespread acceptance of high-yielding corn varieties. Factors contributing to low yields are climatic conditions and low levels of fertilisation. The limited area planted to corn is due largely to the low income derived from corn production. Fertiliser is among the most costly inputs to produce corn. The top three items that comprise the bulk of corn-production costs are hired labor (22 per cent), fertiliser (13 per cent) and seeds (8 per cent) (BAS 2002). A comparison of average production, marketing and distribution costs with Argentina and Thailand reveals a marked cost disadvantage of the Philippines on fertilisers and processing, marketing and distribution costs (Velasco and Cabanilla 2003).

In a span of a decade, yields at the national level have improved by 4.6 per cent. Tariffs on most agricultural inputs have been reduced to 1 per cent and some even enter duty free. The national corn program provides support services in the form of credit facilitation, training, soil testing, price information, postharvest, marketing and market matching. However, the area harvested in 2004 was about 6 per cent less than the area harvested in 1995. Corn farmers continue growing corn despite low incomes. This suggests that they may not have other more viable alternatives to farming corn. Clarete (2005), for example, observes zero growth in the Philippine manufacturing sector. Thus, if tariff protection on corn is lifted, the economy might be faced with further surplus labor from corn-production displacement that could cause wages to decrease and unemployment to increase.

Hog and chicken farmers

Hog raising and chicken production are labor intensive activities and have important links to rural employment. Hog raisers in the Philippines can be classified according to their production capacity: (1) small-scale farmers, who are hog suppliers for villages and small towns or cities, have a sow level of 50 or less; (2) medium-scale farmers, who are suppliers for larger towns or cities, have a sow level of 50 to 200; (3) large-scale/integrator farmers, who are suppliers for capital towns and metropolitan areas, have a sow level of 200 and above. In 2004, small-scale hog farmers made up about 77 per cent of the industry; medium-scale to large-scale (commercial) hog raisers, who are technically and economically efficient, made up the other 23 per cent. The share of commercial hog raisers to total hog inventory in the Philippines has been increasing steadily from 20 per cent in 1995 to 30 per cent in 2003. Net returns to backyard production are estimated at P17,760 for raising 14 head of hogs (BAS 1998). If this amount is earned twice in a year and if the household has no other source of

income,[24] the total income of P35,520 is still about 28 per cent below the 1997 Philippine poverty threshold, which was P49,215 (ADB 2005) for a family of five.

The Philippines is the leading swine producer among the Association of Southeast Asian Nations (ASEAN). The country's total hog production at 26 live pigs for every 100 people is more than double that of Thailand and Indonesia. For every 100 people, Thailand produces 15 live pigs and Indonesia produces four. However, unlike Indonesia and Thailand, the Philippines is not yet competitive as a swine exporter (LDC 2005). Compared to Thailand, Philippine hog producers have higher costs of production. Several factors contribute to these high costs, but marketing and processing costs are the most important. Transportation, handling, cold storage, shrinkage and trading costs are all far greater than those incurred by Thai swine producers. All of these cost factors contribute to total wholesale costs that are 1.38 (large producers) to 1.7 (small producers) times higher than in Thailand (LDC 2005). In terms of volume, feed and supplements make up about 43 per cent of the cost of production and yellow corn comprises about 37 per cent to 45 per cent of feed. The high cost of corn diminishes potential net revenue from swine production. Still, for the 1995 to 2003 period, the hog industry grew annually until there was a contraction within the industry in 2004.

No recent estimates of costs and returns from chicken farming are available to provide some indication of the poverty status of Philippine chicken producers. However, there are five integrated farmers who account for 80 per cent of total Philippine chicken supply; the remaining 20 per cent consists of backyard poultry raisers. Poultry production continues to grow in spite of the threat of cheap imports of chicken-leg quarters. In 2002, special safeguard (SSG) duties on chicken-meat imports had to be imposed when the landed cost breached the trigger price of P93.96 per kilogram. In mid-2004, the SSG duty was lifted in view of rising retail prices in the Philippines (USDA 2004).

Consuming households/industries

The poorest households are protein deficient by as much as 65 per cent (Florentino 1996). Keeping the prices of chicken and pork high will continue to keep poor households deficient nutritionally unless they gain access to cheaper sources of protein. It is also crucial to realise that the worst poverty in rural areas occurs among landless laborers. These laborers often do most of the production work, but they do

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24 Without further information on the characteristics of hog raisers, we assume that hog raisers have no other income sources, which might be a strong assumption.

not necessarily reap the benefits of the higher food prices that have been induced by protectionist policies (Dawe 2004).

The growing meat-processing industry is composed mainly of corporations that range from small to large-scale operations. While poverty is not an issue for these corporations, opportunities for growth that could generate further employment might help increase the income of the poorer employees.

Government revenue

Given the Philippine Government's tight fiscal situation, increasing government revenue through import tariffs is also a trade-policy consideration. Unfortunately, high import duties encourage corruption and smuggling, which does not assure more revenue for the Philippine Government. Corrupt customs officers may gain financially while the Philippine market continues to be all the more flooded with cheap competing imports. In 1996, tariff earnings comprised 12.4 per cent of total government revenue, which were reduced to 6.7 per cent in 2004 (DOF 2005). A majority of the Philippine Government's expenditure program is for debt payments in its various sectors. However, these funds have been inadequate for the agriculture sector to help gear up industries for competitiveness. There are competing needs for funds for social services, such as education and infrastructure development, which are also important elements for the alleviation of poverty.

Other modes of tax collection can be explored to replace tariff revenue. Cororaton et al (2005) examine the impact of Doha scenarios on poverty in the Philippines depending on the mechanism the government adopts to offset forgone tariff revenue. If an indirect tax (VAT) is used, the incidence of Philippine poverty falls marginally but the depth (poverty gap[25]) and severity (squared-poverty gap) increase substantially. If an income tax is used to alleviate poverty, all measures of Philippine poverty increase. In both cases, full liberalisation favours urban households because exports, which are primarily non-agriculture based, expand. With separate simulations, Cororaton et al (2005) find that worldwide free trade is poverty reducing for the Philippines, while domestic liberalisation is poverty increasing for the Philippines and favours urban households. Under worldwide free trade, rural households benefit because of the projected increase in the demand for agricultural products worldwide. With Philippine liberalisation, the anti-rural bias stems from the situation in which import prices for agricultural

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25   The 'poverty gap' has been defined in this study as a measure of the depth of poverty given by the average distance separating the income of poor households from the poverty line.

goods fall more than do the import prices for industrial goods because initial import-weighted average tariff rates are higher for agricultural products.

Welfare effects of invoking special products: the scientific tariff and positive externalities

The scientific tariff

As advocated by the Philippines and the G-33, tariff protection for special products can seem to be justified if analysed within the notion of a scientific tariff, which is defined as a tariff that achieves non-economic objectives at a minimum cost to the economy:

> So conceived, the construction of a scientific tariff presupposes definition in quantitative terms of beneficial results to be achieved by protection and attachment of values to the achievement of different amounts of these beneficial results, values that can be weighed against the cost of protection. [Johnson 1960, 341.]

Johnson outlines that a scientific tariff can be imposed in order to: (1) promote national self-sufficiency and independence; (2) diversify, industrialise or agriculturalise the economy of a country; (3) promote a way of life; (4) increase military preparedness; and (5) serve as a bargaining tariff. Correspondingly, the benefits of the scientific tariff can be quantified in terms of: (1) the value of imports excluded by the tariff; (2) the increase in the quantity of desired production or the increase in the income earned in the various industries; (3) protected employment; (4) the value of imports excluded by tariffs for strategic defense commodities; and (5) the economic damage inflicted upon another country or other countries in order to obtain advantageous tariff concessions.

Applying the notion of the scientific tariff using our welfare estimates in the Philippine case suggests that the cost of tariff protection for the corn, pork and poultry-meat sectors that totals about US$74 million to US$148 million will be the minimum cost of achieving about 894,000 metric tons worth of additional corn production, 291,000 metric tons worth of additional pork production and 176,000 metric tons worth of additional chicken production. Maintaining the scientific tariff on special products will also be implied to be the least costly intervention to exclude about one million metric tons to 1.3 million metric tons of potential yellow-corn imports, 437,000 to 584,000 metric tons of potential pork imports and 266,000 to 357,000 metric tons of potential poultry imports. The tariff protection will also retain benefits for producers and will preserve their livelihood as discussed in the previous section.

Further, using the scientific tariff as a bargaining chip implies an expectation that the Philippines might be able to get concessions from the yellow corn, pork and poultry-meat exporters to the Philippines. These exporters include the United States (corn, poultry meat and pork), Canada (pork and poultry meat) and Thailand (corn). Johnson (1960) suggests that the value of the benefit from a scientific tariff is the value of damage incurred by the exporting country. Alternatively, the benefit from the scientific tariff could conceptually be measured as the amount of trade concessions a country could obtain.

How realistic is it to expect that trading partners of developing countries will provide trade concessions or reduce their subsidies and support for agricultural goods? If trade concessions are not obtained, developing countries will seem to be left with no other recourse than to take the tariff-maintenance route for special sectors, which is to prevent making the agriculture of the poor sector dependent in their countries worse off, at least in the interim.

Yet, is the scientific tariff the least costly way to prevent threatening the poor and their rights? Critics have argued that it is not. Similar to arguments on how to deal with the multifunctional aspects of agriculture, economic theory suggests that in order to address non-economic objectives considered as positive externalities associated with agricultural production, more efficient instruments that target these externalities directly must be used instead.

Positive externalities associated with agricultural production
A positive externality arises when those who are not directly involved reap some of the benefits from an activity. Returning to the Philippine case, if promoting yellow corn, pork and poultry-meat production prevents poor producers from being worse off, the corresponding positive externalities or, analogously, the negative externalities that may be avoided from production displacement can include social unrest, increased crime rates and political instability. However, there are also positive externalities associated with protecting the poor consumers of pork and poultry meat whom we have identified as the losers of the WTO/SP proposal. A more nourished population will produce positive externalities, such as improved productivity, less absenteeism and lower costs of illness, which benefit not only the pork and poultry-meat consumers themselves but also society at large. If the negative externalities avoided by tariff protection are greater than the positive externalities and net economic gains from open markets (or equivalently, if the positive externalities associated with protecting the livelihoods of poor producers are greater than the negative externalities resulting from less nourished consumers and net costs incurred due to trade restraint), tariff protection can be welfare improving. While

empirical measurement of the magnitude of these externalities may be troublesome, this stylised fact has been shown, for example by Schmitz and Moss (2005), in which a positive externality associated with the production of a given commodity is represented as the divergence between the private and social marginal cost curve for the commodity. In this case, instead of incurring the standard deadweight loss, tariff protection can result in net positive welfare gains. However, Schmitz and Moss (2005) point out that if the externalities can be targeted more efficiently with the use of other policy mechanisms, standard trade instruments, such as tariffs and price supports, should not be used.

We argue that, in a developing-country case, the tariff may be the only option remaining to address poverty-related externalities that are linked to agricultural trade and production. While governments and donors continue to fund measures to target the poor directly, the implementation experience has been problematic. To channel resources to a target group identified below an agreed national poverty line, some poverty-targeting measures include education (human capital investments), microfinancing, food subsidies, employment creation, provision of access to health and other social facilities, and occasional cash transfers. Poverty targeting uses policy instruments either to protect the poor from adverse shocks or to promote their long-run move out of poverty. However, in a study of the poverty-targeting experience in India, Indonesia, Philippines, China and Thailand, Weiss (2004), for example, notes that, in practice, most of these targeting measures are a high-cost means of transferring benefits to the poor with relatively high levels of leakage, targeting errors and misappropriation. Also, the modest level of resources directed at the schemes limits their impact. A consistent picture is that poverty reduction has been driven by macroeconomic developments, such as the rate and pattern of economic growth. Weiss's (2004) suggestion therefore was to alter the pattern of growth towards sectors with strong employment effects to have the greatest impact on poverty reduction.

In the Philippines, Balisacan and Edillon (Weiss 2004) review a range of anti-poverty programs with different approaches and nomenclature used by different administrations. The study notes that location targeting has been important when identifying where schemes can function. Funds from donors and from the Philippine Government are provided for a range of services identified by communities themselves. There is also a rice-subsidy program for farmers and consumers implemented by the National Food Authority (NFA) and a scheme to provide a limited range of free drugs to the poor. Even including the food-subsidy activities of the NFA, total direct poverty-focused expenditures were not more than 1.5 per cent of total central Philippine Government expenditures in the immediate pre-crisis period in 1997–98, and no more than 0.3 per cent of Philippine GDP. While data on the total actual poverty-targeted expenditures are not available in the Balisacan and Edillon

study (Weiss 2004) the above review of anti-poverty mechanisms implemented in the Philippines suggests that poverty-targeted policy instruments are expensive and seem to be more costly than are our cost estimates for the short-run protection of the yellow corn, pork and poultry sectors on which the poor depend.

It seems that the lack of available and alternative cost-effective poverty-targeting instruments in our developing-country scenario weakens the conventional economic arguments to use other policy instruments apart from tariffs to target and address a desired social goal. With the scientific-tariff formulation and with positive externalities associated with agricultural production, tariff protection of select agricultural sectors that have strong links to employment of the poor seems to be a last resort to achieve the desired benefit of protecting the poor and their rights in the interim.

Concluding notes: implications for development

Primarily through agriculture, promotion of rural development has been central to the economic development strategies of developing countries. Rural and agricultural populations, a substantial number of which are poor, dominate the economies of less-developed nations. Will selective protection of agricultural sectors as proposed by the WTO/ SP proposal promote rural development and poverty alleviation and help achieve development goals?

If viewed from a purely economic perspective, our standard trade analysis of the Philippines has shown that the cost of shielding a few agricultural products from tariff cuts is the value of forgone economic benefits that can otherwise be gained with lower tariffs. In our study, protecting the corn industry can cause a chain reaction of tariff protection, as is currently the case. Philippine pork and poultry-meat sectors, the major users of corn which have important links to rural employment, are also awarded trade protection in order to thrive. When the corn, swine and poultry sectors are protected, however, agro-based upstream industries such as the feed-milling and meat-processing sectors are constrained by the agricultural protection of their inputs, therefore hindering growth potentials. Further, the consumers of pork and poultry meat forgo benefits from cheaper prices, and the poorest consumers continue to be deprived of having access to these products because of elevated prices.[26] While the corn, pork and poultry producers maintain their benefits from

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26   One can, however, question the magnitude of potential consumer benefits from lower tariffs on said special products since the producers are consumers themselves. When tariffs are lowered, incomes of producers/consumers are reduced. Thus, potential consumer benefits from cheaper meat may not be realised if their livelihood is threatened.

tariff protection, consumers and agro-based upstream industries lose. When tariffs are maintained, net economic costs result. The magnitude of benefits forgone by consumers and corn-based and meat-based processing industries outweighs the benefits obtained by the producers of corn, pork and poultry and the government (through tariff revenues). The greater the number of agricultural products shielded from tariff cuts, the higher the net economic benefits society forgoes. In aggregate, this result may put to question how a policy that shields select products from tariff cuts can make society better off with less economic resources.

On the other hand, if the social and political costs of lowering tariffs are expected to be greater than the cost of selectively maintaining tariffs on special products, the WTO/SP proposal seems warranted. Lowering tariffs that threaten agriculture on which a number of poor workers depend can cause more unemployment; create social unrest and political destabilisation; and endanger the development process.[27] The magnitude of these social and political costs depends on how commodity prices affect incomes and on how producers whose livelihoods are threatened can adjust to freer trade and find other sources of income. Poor farmers might not have the resources, capability or willingness to shift smoothly to alternative income-generating options. If alternative livelihood opportunities quickly absorb displaced sectors, the associated social and political costs of freer trade could be minimised.

The proponents of the WTO/SP proposal have argued that tariffs are the only remaining instrument of defense against subsidised imports that can worsen the poverty situation in their economies. A review of the experience that implemented alternative policy instruments to protect the poor seems to support this claim. While in theory there should be more efficient means than tariffs for targeting poverty, the practice has been difficult. The alternative poverty-targeting policy instruments and programs implemented this far have been expensive and inefficient, and have had a minimal impact in view of insufficient resources available to developing countries.

It seems that developing countries are driven to take a defensive trade-policy stance such as in the SP proposal in the WTO because of the prevailing trade situation that perpetuates distortions in world agricultural markets through export subsidies and domestic support that only the richer countries can afford to

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27   Development in this sense is viewed from a broader, capabilities-approach perspective as called for by Sen (1999), in which the overarching goal of development is to maximise the ability of people to live the kind of life they value.

provide. Tariff protection has become a countervailing response to artificially cheap imports that threaten the survival of key sectors in their economies. This underscores the important role of rich countries, when they reform policies that distort prices of commodities that are vital to the survival of the poor in poor countries.

The number of special products to designate and the duration and terms of resorting to tariff protection remain contentious in the Doha Round of trade negotiations. For proponents viewing trade openness as an essential element of economic growth and economic development, prolonging tariff protection should not be tolerated, because it entails high opportunity costs that can curtail development efforts. Meanwhile, some observers have pointed out that there is no convincing evidence that trade liberalisation is predictably associated with economic growth (for example, Rodrik 2001). An alternative thinking is that a development-friendly international trading regime is one that does more than increase access to markets. Rather, a development-friendly international trading regime is one that provides poor countries policy autonomy to experiment on divergent solutions to the development bottlenecks they face (Rodrik 2001). As the options for national instruments are circumscribed by international policies, the latter should be designed in such a way that provides greater scope and flexibility for the application of domestic instruments to address the most serious obstacles to growth and development, and these differ considerably across countries (UNCTAD 2006). The WTO/SP proposal seems to embody this alternative view. Self-designation of special products, as suggested by WTO/SP-proposal proponents, buys time for poor countries to develop strategic capabilities on their respective key sectors that have strong links with rural employment, especially the livelihoods of the poor. This proposal can draw resources to temporarily protected strategic sectors, which also highlights the need to come up with more innovative and effective support measures that will maximise these sectors' potentials. Eventually, the expectation is that this development pathway will allow countries to benefit more from trade openness.

Within the context of the SP proposal, rightly or wrongly, we think that the international-trade accord must allow developing countries to have the policy maneuvering space they need to undertake their respective development processes. In such a case, accountability is on the national governments, rather than on the WTO, which is perceived to be a product of northern imperialism over the south. National decisions on the adoption of policy instruments will determine the success or failure of the development strategies of the poorer countries. ●

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Appendix: the welfare effects of tariffs on Philippine special products

Consider Figure 1 (p 197), in which S_d is the private marginal cost curve and D_d is the pork/chicken producers' derived demand for corn. The free-trade price is P_f and the price with a tariff is $P_f(1+T_0)$. The amount of corn imports under a free trade scenario is given by q^2 *minus* q^1. Under a tariff T_0, imports are reduced to q_2^0 *minus*

$q_1{}^0$. Using standard trade analysis, corn producers maintain benefits from tariff protection as given by area $P_f(1+T_0)$ $abPf$; corn users (that is, pork and poultry sectors) lose by area $P_f edP_f(1+T_0)$; government generates revenue amounting to area *adfc*; and the net social cost of maintaining the tariff on corn is given by area *abc+def*. Empirical estimates of the welfare effects of the corn tariff are in Table 1 (p 199) and discussed in the text.
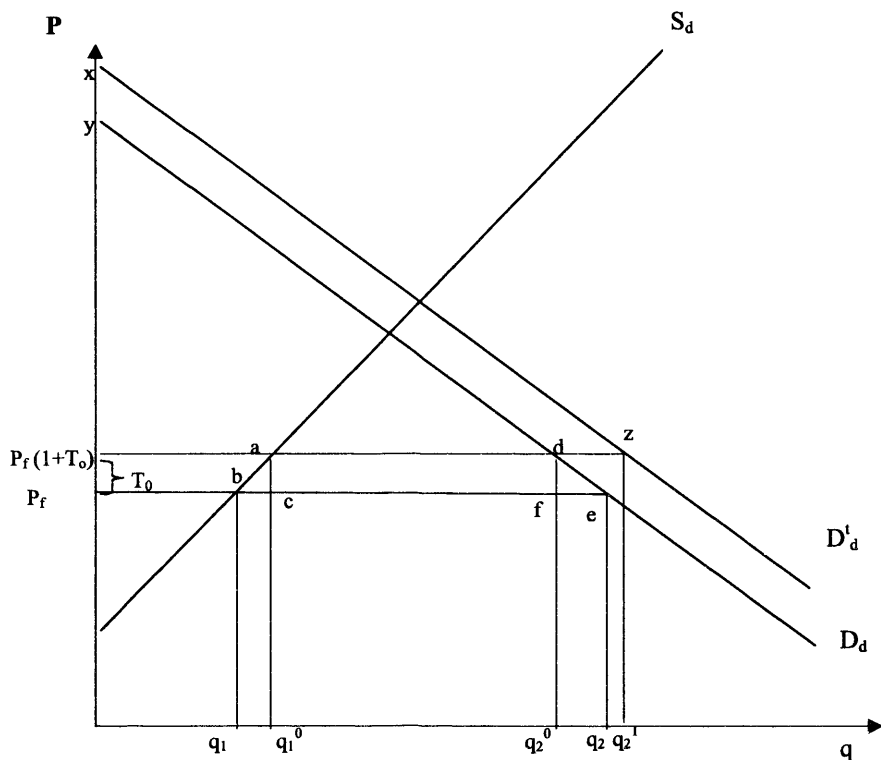
Next, we consider the effects of a tariff on pork and chicken meat given a tariff on corn. Initially at point d, tariffs on pork and chicken meat are 0 per cent. When tariffs are imposed on pork and chicken meat, we expect D_d to shift outward to $D^t{}_d$, since tariff protection promotes increased production of pork and chicken. While a tariff on corn is imposed, the producer benefits obtained by the pork and chicken sector is given by the area between D_d and $D^t{}_d$ bounded by the price axis and the corn price line with the tariff, $P_f(1+T_0)$. The net benefits (which could be positive, negative or zero) is given by area *xydz* minus $P_f edP_f(1+T_0)$.

The producer costs incurred by the pork and chicken sector as a result of tariff protection on corn (analogous to area $P_f edP_f(1+T_0)$ in Figure 1), as well as the producer benefits obtained by the pork and chicken sector as a result of tariff protection of their outputs, while corn is levied a tariff (analogous to area *xydz* in Figure 1), can also be analysed through the pork/chicken market. Consider Figure 2 (p 198), where S_t is the private marginal cost curve for pork/chicken meat when there is a tariff imposed on corn, S_f is the private marginal cost curve for pork/chicken meat when there is no tariff imposed on corn and D is the demand schedule for pork/chicken meat. The free-trade price of pork/chicken meat is P_f, with a tariff it is given by $P_f(1+T_0)$. The cost of the tariff on corn to the pork/chicken sector is given by area *gbch*, where the marginal cost curve of the pork/poultry sector shifts to the left from S_f to S_t due to higher production costs with a tariff on corn inputs. However, with a tariff on pork and chicken meat (while there is a tariff on corn), pork and poultry-meat producers gain area $P_f(1+T_0)$ $abPf$ relative to a scenario where there is free trade of pork and poultry meat while there is a tariff on corn.

Further, we examine the effects of the tariff on pork and chicken meat on consumers and government revenues using Figure 2. Under a tariff T_0, pork /chicken meat imports are reduced to an amount of $q_2{}^0$ *minus* $q_1{}^0$ from a level of imports equivalent to q^2 *minus* q^1 under free trade of pork/chicken meat. Using standard trade analysis, pork/poultry meat users (that is, consuming households, meat processing industries) lose by area $deP_f P_f(1+T_0)$; government generates revenues amounting to area *adfc*; and the net social costs of maintaining the tariffs on pork and poultry meat is given by area *abc+def*. Empirical estimates of the welfare effects of the pork and poultry meat tariffs on pork and poultry meat producers and consumers (while there

is a tariff on corn) are in Tables 2 and 3 (pp 200–01), respectively, and are discussed in the text.[**]

Figure 1: Welfare effects of a tariff on corn, pork and poultry meat on corn producers and corn users (that is, pork and chicken meat producers)

Figure 2: Welfare effects of a tariff on corn, pork and chicken meat on pork/chicken meat producers and consumers

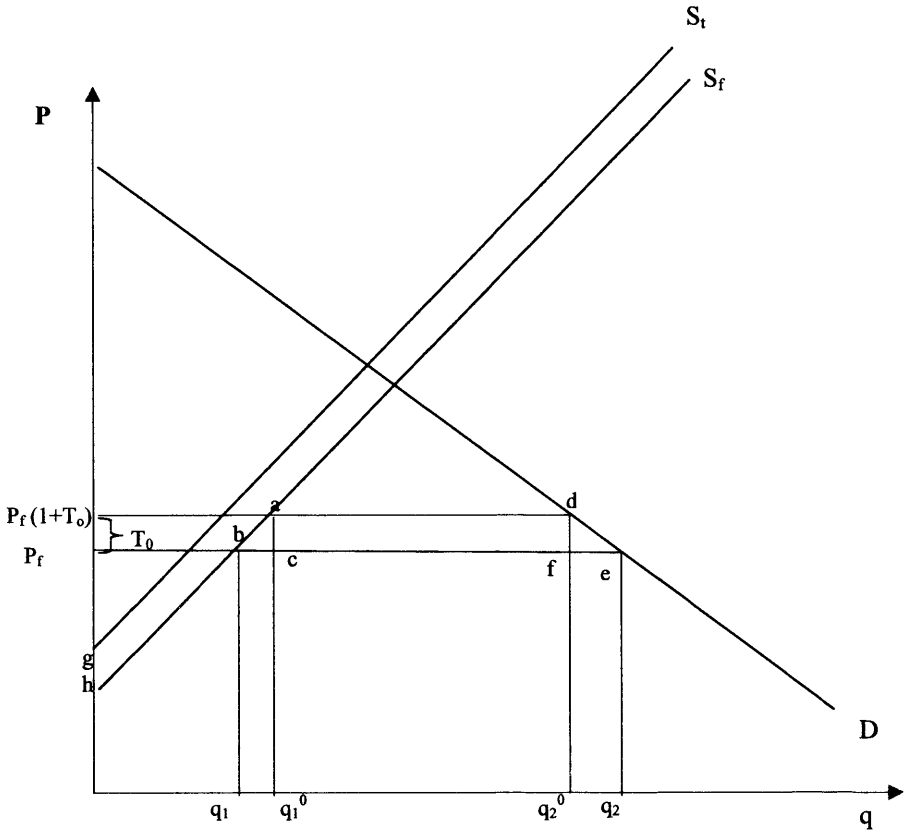## Table 1: Welfare effects of maintaining a 35 per cent tariff on Philippine corn imports

	Price elasticity of demand	
	1	0.5
World price of corn (cif in pesos/kg) [a]	6.81	6.81
Price of corn imports with 35% tariff (in pesos/kg)	9.19	9.19
Price difference between world price and price with 35% tariff	2.38	2.38
Wholesale price (in pesos/kg) [a]	8.97	8.97
Volume of corn imports (in mt) [a] [b]	229,430	229,430
Volume of yellow corn production (in mt) [a] [b]	2,564,211	2,564,211
Total corn demand	**2,793,640**	**2,793,640**
Estimated demand with 0% tariff (in mt) [b]	**3,517,917**	**3,155,779**
Price elasticity of supply = 1		
Estimated production with 0% tariff (in mt) [b]	1,899,415	1,899,415
Total estimated imports with 0% tariff	1,618,502	1,256,364
Decrease in local production with the price drop of corn imports	664,795	664,795
Increase in imports with the price drop of corn imports	1,389,072	1,026,934
Producer benefits (in million pesos)	**5,320**	**5,320**
Government revenues (in million pesos)	**547**	**547**
Consumer loss (in million pesos)	**7,522**	**7,090**
Net loss (in million pesos)	**1,655**	**1,224**
Price elasticity of supply =.5		
Estimated production with 0% tariff (in mt) [b]	2,231,813	2,231,813
Total estimated imports with 0% tariff	1,286,104	923,966
Decrease in local production with the price drop of corn imports	332,398	332,398
Increase in imports with the price drop of corn imports	1,056,675	694,536
Producer benefits (in million pesos)	**5,716**	**5,716**
Government revenues (in million pesos)	**547**	**547**
Consumer loss (in million pesos)	**7,522**	**7,090**
Net loss (in million pesos)	**1,259**	**828**

[a] average for the years 2001–03

[b] mt refers to metric tons

Source of primary data: Philippine Bureau of Agricultural Statistics

Table 2: Welfare effects of maintaining a 30 per cent tariff on Philippine pork imports

	Price elasticity of demand	
	1	0.5
World price of pork (cif in pesos/kg) [a]	44.86	44.86
Price of pork imports with 30% tariff (in pesos/kg)	58.31	58.31
Price difference between world price and		
price with 30% tariff	13.46	13.46
Wholesale price (in pesos/kg) [a]	87.53	87.53
Volume of pork imports (in mt) [a] [b]	8,327	8,327
Volume of pork production (in mt) [a] [b]	1,260,574	1,260,574
Total pork demand	**1,268,901**	**1,268,901**
Estimated demand with 0% tariff (in mt) [b]	**1,561,724**	**1,415,313**
Price elasticity of supply = 1		
Estimated production with 0% tariff (in mt) [b]	969,672	969,672
Total estimated imports with 0% tariff	592,052	445,641
Decrease in local production with the price drop		
of pork imports	290,902	290,902
Increase in imports with the price drop of pork imports	583,725	437,313
Producer benefits (in million pesos)	**15,006**	**15,006**
Government revenues (in million pesos)	**112**	**112**
Consumer loss (in million pesos)	**19,045**	**18,060**
Net loss (in million pesos)	**3,927**	**2,942**
Price elasticity of supply =.5		
Estimated production with 0% tariff (in mt) [b]	1,115,123	1,115,123
Total estimated imports with 0% tariff	446,601	300,190
Decrease in local production with the price drop		
of pork imports	145,451	145,451
Increase in imports with the price drop of pork imports	438,274	291,862
Producer benefits (in million pesos)	**15,984**	**15,984**
Government revenues (in million pesos)	**112**	**112**
Consumer loss (in million pesos)	**19,045**	**18,060**
Net loss (in million pesos)	**2,949**	**1,964**

[a] based on 2001–03 averages sourced from FAOSTAT, 2005

[b] mt refers to metric tons

Dollar to peso exchange rate used is P52.2665 to $1 (2001–03 average sourced from Bangko Sentral ng Pilipinas)

Table 3: Welfare effects of maintaining a 40 per cent tariff on Philippine chicken imports

	Price elasticity of demand	
	1	0.5
World price of chicken (cif in pesos/kg) [a/]	28.62	28.62
Price of chicken meat imports with 40% tariff (in pesos/kg)	40.06	40.06
Price difference between world price and price with 40% tariff	11.45	11.45
Wholesale price (in pesos/kg) [a/]	73.41	73.41
Volume of chicken meat imports (in mt) [a/ b/]	15,746	15,746
Volume of chicken meat production (in mt) [a/ b/]	616,434	616,434
Total chicken meat demand	**632,180**	**632,180**
Estimated demand with 0% tariff (in mt) [b/]	**812,803**	**722,492**
Price elasticity of supply = 1		
Estimated production with 0% tariff (in mt) [b/]	440,310	440,310
Total estimated imports with 0% tariff	372,493	282,182
Decrease in local production with the price drop of chicken meat imports	176,124	176,124
Increase in imports with the price drop of chicken meat imports	356,747	266,435
Producer benefits (in million pesos)	**6,048**	**6,048**
Government revenues (in million pesos)	**180**	**180**
Consumer loss (in million pesos)	**8,270**	**7,753**
Net loss (in million pesos)	**2,042**	**1,525**
Price elasticity of supply =.5		
Estimated production with 0% tariff (in mt) [b/]	528,372	528,372
Total estimated imports with 0% tariff	284,431	194,120
Decrease in local production with the price drop of chicken meat imports	88,062	88,062
Increase in imports with the price drop of chicken meat imports	268,685	178,373
Producer benefits (in million pesos)	**6,552**	**6,552**
Government revenues (in million pesos)	**180**	**180**
Consumer loss (in million pesos)	**8,270**	**7,753**
Net loss (in million pesos)	**1,538**	**1,021**

[a/] based on 2001–03 averages sourced from FAOSTAT 2005
[b/] mt refers to metric tons
Dollar to peso exchange rate used is P52.2665 to $1
(2001–03 average sourced from Bangko Sentral ng Pilipinas)

Table 4: Welfare effects of tariff maintenance and full liberalisation in Philippine special products

	Gain(+)/loss(-) by sector				Net gain(+)/ loss(-)
	Corn producers	Pork and poultry meat producers	Meat processors/ consumers	Government revenues	
Scenario 1					
Maintain status quo on corn	+	–	–	+	–
Maintain status quo on pork and poultry meat	+	+	–	+	–
Net gain(+)/ loss(-)	+	+	–	+	–
Scenario 2					
Fully liberalise corn imports	–	+	+	–	+
Fully liberalise pork and poultry meat imports	–	–	+	–	+
Net gain(+)/ loss(-)	–	–	+	–	+