USDA Foreign Agricultural Service
GAIN Report
Global Agriculture Information Network
Template Version 2.09

Voluntary Report - public distribution

Date: 12/21/2006

GAIN Report Number: RP6071

Philippines

Poultry and Products

Current and Future Prospects of the Philippine Poultry Industry

2006

Approved by:
Dennis Voboril
U.S. Embassy

Prepared by:
Sonja Perakis
International Agricultural Summer Intern

Report Highlights:
The Philippine broiler industry has made significant contributions to the local agricultural economy over the past two decades. However, recent changes in the sector's environment including high and volatile production costs along with concern about Highly Pathogenic Avian Influenza (HPAI) in neighboring countries have led to a 'state of flux' for the industry. The situation is exacerbated by the fact that broiler production costs in the Philippines are relatively high as a result of protectionist domestic corn policies, which prevents the country from being a major regional exporter of poultry meat.

Includes PSD Changes: No
Includes Trade Matrix: No
Unscheduled Report
Manila [RP1]
[RP]

Acknowledgements:

The author would like to thank the following people for their support during the process of this study: Ms. Nenita Yanson (BAS), whose seminal work on the industry's Early Warning System was the basis of this study, Mr. Dennis Voboril (USDA Manila), Ms. Pia Abuel-Ang (USDA Manila), Mr. Jude Akhidenor (USDA Manila), Ms. Florence Mojica-Sevilla (UA&P), Ms. Manolita Gaerlan (BAI) and Mr. John Dyck (USDA ERS).

I. Introduction

The poultry industry has, in recent times, made significant contributions to the Philippine agricultural economy. This is despite pervasive 'boom and bust' production cycles induced by the sector's highly price responsive nature. As the fastest growing source of meat supply and demand[1], the country's total chicken output for 2005 was estimated at 1,215.67[2] thousand metric tons live weight, of which approximately 65 percent was broiler output. That same year, it ranked third behind the rice and hog sectors in terms of percentage share of contribution to total agricultural output at 9.96 percent[3]. The distribution of broiler production is concentrated in the regions of Central Luzon and CALABARZON (provinces of Cavite- Laguna-Batangas-Rizal-Quezon), which together contribute over half of the total chicken output (live weight).

In the Philippines, highly integrated commercial farmers, 'integrators,' produce between 75 and 80 percent of broiler chicken meat, while non-integrated commercial farmers produce the remaining 20-25 percent. However, recent changes in the sector's environment including high and volatile production costs along with concern about Highly Pathogenic Avian Influenza (HPAI) in neighboring countries have led to a 'state of flux' for integrated producers. Some producers have expanded output, while others have either closed down parts of their operation or resorted to toll servicing for various stages of the broiler production and marketing process.[4] This development will have important implications for large and small producers alike. Current apprehensions on the part of producers have led to lower industry-wide production levels since 2005. This in turn has induced a rise in imported broiler chicken meat. As of July 2006, the Philippines had already utilized 60 percent of its Minimum Access Volume for the year, well above past utilization rates (BAI, 2006) largely due to lower prices of chicken in the world market.

While per caption broiler consumption has nearly doubled over the last 15 years due to fast growing population, weak purchasing power has kept per capita consumption in the Philippines low at about eight kilograms per year. Majority of broiler meat continues to be sourced fresh via local wet markets, despite a growing trend in consumption via modern retail outlets (supermarkets), restaurants, hotels and institutions.

Broiler chicken production costs in the Philippines are relatively high compared to world prices, as a result of protectionist domestic corn policies, which prevents the country from being a major regional exporter. However, due to the country's current Avian Influenza free status, the ability of Philippine producers to manufacture high quality, value added poultry products made from both domestically produced and imported broiler meat has surfaced, helping to differentiate Philippine products from its regional competitors. High levels of regional and global intra industry trade indicate that there is room for further expansion in the market of such goods (Chang, 2005). Sanitary and phytosanitary issues such as handling practices, traceability and animal health may nevertheless continue to impede such endeavors.

The following analysis of future prospects of the Philippine broiler industry is organized as follows: First, a snapshot of the Philippine chicken industry helps to set the stage for the sector's analysis. Second, challenges to the industry are identified including high and volatile production costs, animal disease and the pervasive gap between supply and demand. Third,

[1] The dressed broiler sector has, on average, posted the highest percent increases in production and consumption between 1990 and 2005 at 5.8 and 4.0 percent, respectively.
[2] Volume of production, by quarter (p.6 of 2005 Chicken Industry Performance Report)
[3] BAS, 2006 "Performance of Philippines Agriculture: January-December, 2005"
[4] Toll servicing is when a company provides a service for a fee. For example, a chicken producing company pays Royal Cargo to process its chicken.

the industry's current trends and future prospects are noted along with a discussion of the role of public private partnerships in HPAI prevention and mitigation, as well as foreign market access and price stability. Fourth, policy recommendations and conclusions are drawn.

II. Snapshot of the Philippine Broiler Industry

In the Philippines, the chicken industry is mainly composed of native, broiler, and layer chickens. Total chicken inventory is dominated by native chickens, which contribute 65 percent of the total number of birds.[5] Production and consumption of chicken meat on the other hand are driven by the broiler industry, as it accounts for between 65 and 70 percent of production. Native chickens, which account for around 25 percent of total domestic consumption of chicken meat, are generally raised by backyard producers for household consumption or local wet markets, and therefore rarely reach the retail setting. The final 5-10 percent of chicken meat is composed of culled layers and game fowl.

A. Production

A few highly integrated firms dominate the Philippine broiler industry. As evidenced in **Figure 1**, such companies contribute approximately 80 percent of the country's broiler meat supply, while non-integrated commercial producers and backyard raisers supply the remainder (BAI, 2006 and Industry Players). While integrated producers organize themselves under PABI, the Philippine Association of Broiler Integrators, non-integrated producers organize themselves as UBRA, the United Broiler Raiser Association. Integrated producers oversee all stages of the broiler production operation—from the importation of parent and grandparent stock for breeding and feed milling to broiler grow-out and dressing.

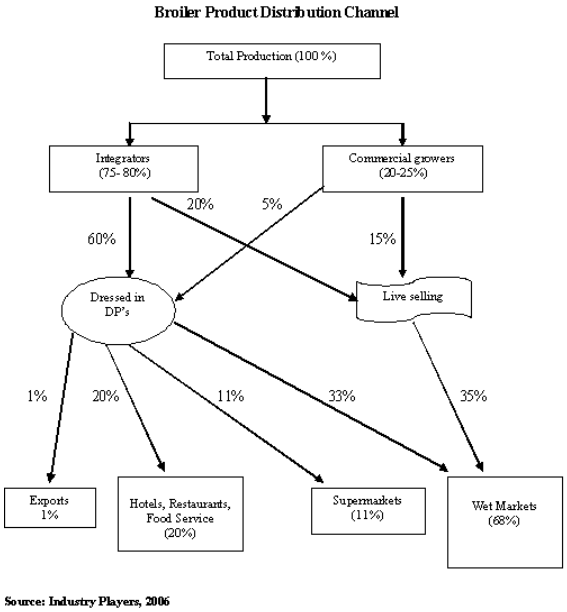

Figure 1. Source: Industry Players, 2006

A lack of consistent coordination between producers, consumers and government, combined with the highly price sensitive nature of producers has led to boom and bust production scenarios (Yanson, 2005). Many production inputs are highly import-dependent (including day old grand-parent and parent stock, broiler chicks, protein meal, biologics and capital)

[5] Inventory in this case refers to the number of birds. BAS, 2006

(BAI, 2006). The sector is highly protected through minimum access volumes (a type of tariff-rate quota), and domestic prices are generally higher than international prices due to higher feed costs. While corn is produced domestically, a tariff-rate-quota on corn limits imports and raises corn prices. In an attempt to reduce feed costs, imports of feed wheat are regularly needed to supplement domestic supply.

Companies with integrated operations are involved in all aspects of the broiler supply chain including the production, marketing and distribution of broiler chickens, the importation of parent and grandparent stock, as well as the production and sales of mixed feeds (**Figure 2**). The use of toll servicing has however gained prominence in recent times. The Philippine Association of Broiler Integrators (PABI) comprises the historically dominant integrators including San Miguel Foods Incorporated, Swift Foods, Vitarich, Universal Robina Corporation and Tyson Bounty Agroventures. Of these, San Miguel Foods Incorporated is the leader in terms of domestic market share at over 40 percent (Industry Source). Broiler chickens produced by PABI members are either marketed directly to wet markets or sold to hotels, restaurants, institutions and supermarkets via wholesalers.

Figure 2. Source: Yanson, 2006

Several domestic producers unaffiliated with PABI have organized themselves under the United Broiler Raisers Association (UBRA). Most UBRA members are non-integrated commercial producers who, as the country's primary market for parent stock (PS) breeders, act as recipients of day old broiler birds (DOCs) for grow out. However, a few firms continue to affiliate themselves with UBRA while operating fully integrated supply chains. Commercial grow out farms range in capacity from 24,000 to 600,000 birds. Most broilers produced by non-integrated commercial producers are marketed live to wet markets via intermediaries, or '*viajeros.*'

In addition, a small portion of domestic broiler supply is sourced via imports under the MAV. In 2005, the Philippines imported over 28,000 metric tons of broiler chicken (or four percent of total supply) in the form of chicken leg quarters, mechanically de-boned meat, chicken fats and whole chickens (BAI, 2006). Fifty percent of imported broiler meat is composed of chicken leg-quarters (BAI, 2006). This cut is generally used in the food service sector and for processing for re-export.

High production costs have resulted in historically low or non-existent chicken exports from the Philippines. However, following the 2004 East Asian Highly Pathogenic Avian Influenza (HPAI) outbreak, the Philippines was able to take advantage of its 'Bird Flu Free' status to export a small volume of broiler chicken meat to Japan primarily in the form of frozen boneless broiler leg quarters, frozen wing sticks and skinless, boneless broiler legs (BAI, 2004). While 2004 and early 2005 were record years in terms of broiler meat exports at 1,729 and 1,658 MT respectively, the excitement was short-lived due to the suspected case of an outbreak of bird flu on a small poultry farm in Calumpit, Bulacan. Exports were voluntarily halted for a year (from July 8, 2005 until May 24, 2006) while the Bureau of Animal Industry (BAI) conducted tests and the governments of Japan and the Philippines renegotiated the terms of their poultry trade[6] (Felix, 2006). While the concern over a possible bird flu finding prompted Japan to ban imports of broiler meat from the Philippines, the Australian Animal Health Laboratory, which serves as the Office International des Epizooties' (OIE) regional reference laboratory, concluded that the Philippines was indeed HPAI free. Integrator San Miguel Foods, Inc. and a local exporter-processor have modestly resumed its export ventures of valued added and processed broiler chicken, while Swift Foods and Tyson Agroventures intend to follow suit in the upcoming months (Industry and Pascual, 2006).

B. Consumption

While to total consumption of broiler meat has been rising due to the fast growing population, per capita broiler consumption has remained relatively flat in the last few years (**Figure 3**). Total chicken consumption in the Philippines rose from 267,703 MT in 1990 to 669,411 MT in 2005 (BAS, 2006). Filipino consumption remains weak, due in part to weak purchasing power as well as strong preference for pork of Filipino consumers when compared to its neighbors Malaysia and Thailand where per capita consumption levels have reached 38.4 and 12.7 kg per year, respectively (Pascual, 2006). Following broiler meat price spikes, Filipino consumers are easily able to substitute pork, fish and other protein sources for chicken, resulting in somewhat 'fickle demand.' Pork nevertheless remains the dominant meat source among Filipinos (at over 50 percent), as they consume 13.69 kg per capita per year (BAS, 2006). In addition, there is a conventional view among industry players that cell

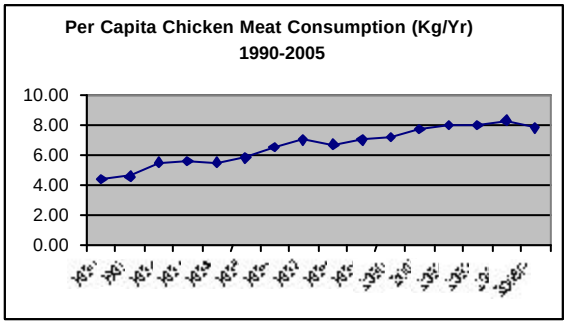

Figure 3 Source: Bureau of Agricultural Statistics, 2006

phone use has become so popular in recent times that people, especially in the lower income brackets, are said to choose to 'load up' their mobile phones versus spending their income on expensive protein sources. This is expected to continue to affect the already income elastic tendencies of Filipino broiler chicken consumers as they choose to consume more 'loads,' and derive their calories from cheaper food sources, such as rice.

[6] BAI, 2006 "International Veterinary Certificate" available at http://www.maff_gqs.go.jp

Consumption of broiler chicken meat generally occurs near the site of production. This is evidenced in the concentration of production in the central Luzon region and of consumption in Metro Manila and the 'clustering' of such operations. This phenomenon is, in part, in response to poor infrastructure, expensive domestic transport costs and unreliable cold storage logistics and storage facilities[7]. The preference for fresh broiler meat is reflected in the 68 percent of broiler chicken meat that is sourced fresh from wet markets, while the remaining 32 percent is consumed via hotels, restaurants and modern retail outlets (including supermarkets and fast food establishments). Despite the overwhelming role of wet markets, consumption via the fast food, restaurant and supermarket sectors has increased steadily in recent times. The driving forces behind this phenomenon include an increasingly urban Filipino population, demographic changes, and heightened food safety awareness, and expanding modern retail formats into major provincial cities.

III. Issues Arising from the Sector's Environment

A. Cost of Production

The high and volatile cost of producing broilers in the Philippines has been identified as a major impediment to the sector's development and its international competitiveness. As evidenced in **Figure 4**, the cost of Philippine broiler meat production dwarfs those of its East and South East Asian as well as Latin American counterparts (http://www.hybro.com). The Bureau of Animal Industry's estimates in **Figure 5** sheds light on the estimated distribution of costs involved in the broiler chicken meat production process during the month of May 2006. Broiler feed, as the 'cost center[8]' of broiler chicken grow-out process, accounts for over half (BAI, 2006) of the total cost of producing live broilers[9]. Some integrators, such as San Miguel Foods Inc.[10], have incorporated feed milling into their operations with the intention of ensuring both cost-effectiveness and consistent quality, while others have expanded their feed milling operations to produce mixed commercial feeds. Other production costs of notable concern to integrated and non-integrated producers alike include the implications of persistent low feed conversion ratios (FCR) and logistics. In addition, the unpredictability of world prices of import dependent inputs such as corn, protein meal, grandparent and parent stock day old chicks and capital are of great concern.

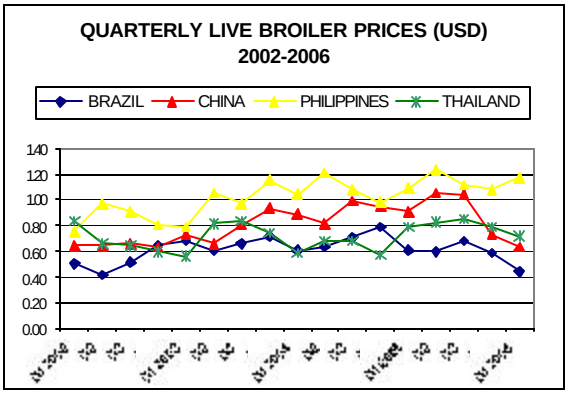

Figure 4 Source: Hybro Marketing, 2006. Prices based on July 2006 exchange rate.

[7] This makes it unlikely for production to be entirely concentrated in one region of the country for consumption in another. In this sense, the industry is somewhat fragmented.
[8] Taganas, 1989 originally named it as such.
[9] Feed likewise accounts for over a third of the price per kilogram of both dressed wholesale broilers and over 30 percent of the final per kilogram retail price (BAI, 2006 production cost estimates).
[10] San Miguel Foods Inc. (SMFI) contributes to over one third of the total commercial feed market.

Figure 6 Broiler Production Cost Estimates (May 2005, 2006)

	Cost of Production (in Pesos)	Farm Price (live)	Wholesale Price (dressed)	Retail Price (dressed)	Landed Cost Imported Chicken Cuts (In-quota)
2005	57.89	63.06	85.25	99.59	40.37
2006	48.27	59	84.75	99.96	34.98

Source: BAI, 2006, World Trade Atlas

Feed Prices: Feed formulations used for broiler grow-out include chick booster mash, roiler starter mash and broiler finisher mash each of which is tailored to the specific stages of broiler development. Such formulations include yellow corn, soybean meal, fishmeal, meat and bone meal, rice bran, copra meal and coco oil, amongst others. The bulk of poultry feed is comprised of corn and soybean meal, contributing 50 to 60 percent and 20 to 25 percent, respectively. While corn serves as the carbohydrate and energy source, soybean meal is the main protein source of most feeds. Given their unique nutritional properties, feed producers cannot freely interchange many of the inputs of their formulation (i.e. wheat cannot be freely substituted for corn). Other ingredients such as fishmeal, rice bran, vitamins and others make up the remaining 20 to 25 percent of broiler feed products. The majority of such inputs including yellow-corn, rice bran and copra meal are mainly sourced domestically, while other feed ingredients such as soybean and fishmeal are sourced solely via imports.

Yellow corn is an integral and 'rigid' component of broiler chicken feed mix. Accounting for 50 percent of the composition of most feeds, yellow corn serves as the primary source of both calories and carbohydrates for growing broiler chickens. The volatility of its price therefore presents an unavoidable challenge to the broiler industry. Rain fed yellow corn, which is prevalent throughout most of the Philippines, is harvested once a year during the months of July, August, and September. Irrigated corn on the other hand is harvested up to twice a year depending on the region and microclimate (Corpuz, 2006)

As evidenced in **Figure 7**, the surge in domestic corn supply during the harvest months leads to a depression in prices during the third quarter of most years. Price spikes in turn coincide with the low corn supply of the depressed season. Erratic rainfall caused by the El Niño and La Niña weather patterns, yearly typhoons, and other environmental shocks further aggravate domestic yellow corn supply and prices.

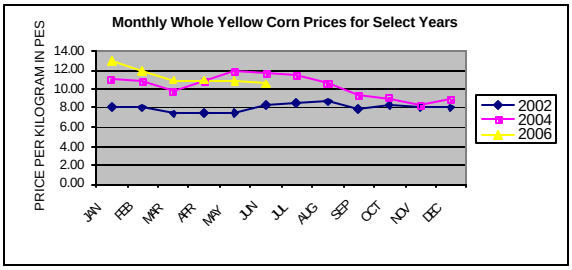

Figure 7 Source: BAS, 2006

Annual yellow corn production has increased steadily in recent times (**Figure 8**). Nevertheless, imports have contributed up to 15 percent of total yearly yellow corn supply since 2000[11]. While imported yellow corn could be used to help offset some of the environmentally induced price volatility mentioned above, improper timing of such imports has had the opposite effect[12] (**Figure 9 and 10**). The 'highly sensitive' nature of this commodity has led to the implementation of some protective measures namely the use of both a Minimum Access Volume (MAV)[13] and a tariff rate quota ranging from 35 percent in-quota and 50 percent out-quota on imported yellow corn by the government.

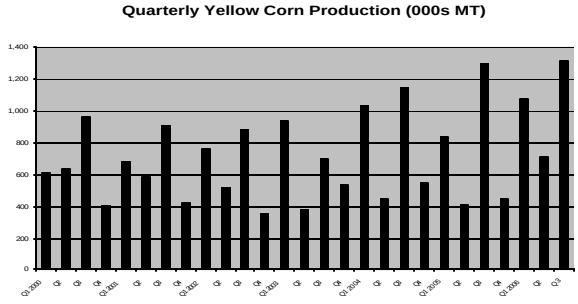

Figure 8 Source: BAS, 2006

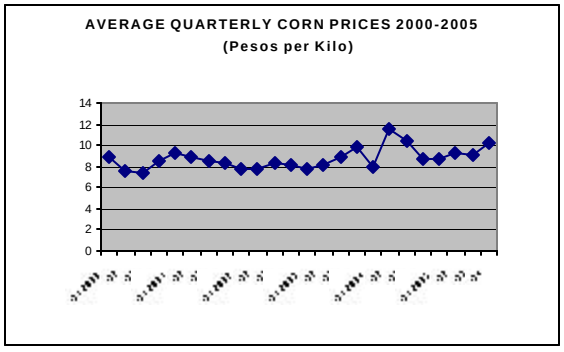

Figure 9 Source: Bureau of Agricultural Statistics, 2006

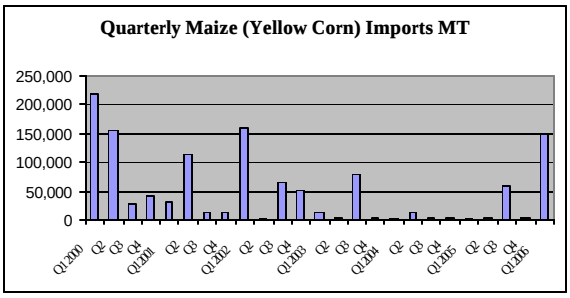

Figure 10 Source: Global Trade Atlas, 2006

[11] Based on yellow corn production (BAS, 2006) and maize import (World Trade Atlas, 2006) quantities.
[12] For example, it makes little sense to import large volumes of yellow corn during the 3rd quarter when domestic supply is already quite high and prices depressed. Rather, with proper timing and coordination, imports could be used to maintain consistent year round prices, leading to a ripple effect throughout the downstream poultry and livestock sectors.
[13] The underutilized (at 37 percent) MAV was set at 216,940 in 2005.

Low Feed Conversion Ratio: The average feed conversion ratio (FCR) for broiler chicken in the Philippines is 2.0, which is relatively low when compared to other regional producers, such as Thailand with an FCR of 1.85 (Ang, 2005). This is due in part to the Filipino preference for smaller sized bird carcasses. As a result, broiler chickens are not able to meet their peak feed efficiency, resulting in higher cost per kilogram of meat (Chang, 2005 and Yanson, 2005). Less than optimal production practices also play an important role in the sector's low FCR, which likewise result in high consumer prices for domestically produced broiler chicken meat (Yanson, 2005).

Logistical Concerns: Infrastructure and logistics present challenges to the broiler chicken industry at all stages of the production process (from the transportation requirements of feeds to the cold storage of frozen broiler meat). This has led to the 'clustering' of various components of the broiler chicken production process whereby feed production takes place near grow-out facilities, which are in turn located in close proximity to the dressing plants supplying local wet markets (Yanson, 2006).

Broilers are marketed and distributed as either live or dressed. Given the product's highly perishable nature, the distribution subsystem is the final step in ensuring that consumers receive broiler meat in a timely manner. Aside from a few integrators, industry players tend to limit company owned cold storage facilities and rent such spaces instead (Yanson, 2005). In the case of live broilers, the cost of freight, trucking, and handling (FTH) represents two percent of their final cost to consumers (see **Figure 5,** page 21). The delivery of live broilers is generally contracted-out to independent trucking companies by industry integrators and to 'viajeros' by independent commercial producers. In the case of dressed and processed chickens (as part of the post production stage), the cost of FTH accounts for just 0.5 percent of the final retail price.

B. Animal Diseases

While several animal diseases currently threaten the Philippine broiler industry, two in particular are addressed here: Highly Pathogenic Avian Influenza (HPAI), or H5N1, and New Castle disease. The Philippines has been spared from the H5N1 outbreak that has devastated the poultry industries of neighboring Indonesia and Thailand (WHO SE Asia, 2006). New Castle disease, on the other hand, is pervasive in both the native and backyard chicken populations (BAI, 2006). Despite the routine use of New Castle vaccination as part of both integrated and non-integrated commercial broiler chicken production, New Castle disease continues to threaten the industry.

Several factors contribute to the level of threat that animal diseases pose to the industry. First, due to the nature of their operations, backyard poultry operations are much more susceptible to Avian Influenza and New Castle diseases. However, backyard raisers and commercial growers are often located in very close proximity to one another creating a looming threat to integrated and non-integrated producers alike[14]. Second, in the Philippines, rice and poultry production - including ducks and chickens - often occur adjacent to each other, while migratory birds tend congregate where food is readily available. Together, this makes for a scenario where migratory birds with the disease could potentially come in contact with both commercial and non-commercial poultry. Third, as mentioned previously, Filipinos source the bulk of their broiler chicken meat from wet markets in either live or dressed form. Such settings are viewed with increased scrutiny because of their low levels of sanitation and the pervasive use of non-NMIS certified dressing plants (Chang, 2005 and Yanson, 2005). The country's main broiler meat marketing channel may therefore pose additional threats to both disease and public health, should an outbreak occur in the future

[14] This is especially the case for the area of Batangas in Luzon (BAI, 2006).

(Chang, 2005). Fourth, exotic bird smuggling has immerged in recent times as an important issue for the Philippine broiler sector in general. Finally, in the case of *velogenic* New Castle Disease[15], young chickens of backyard raisers often fall victim to the disease's very rapid incubation period (two to six days). This gives a very short period to observe, monitor or treat the disease. Typically, unless (1) game fowl are affected or (2) the entire flock dies, such raisers do not report the problem and simply bury the dead (DA, 2006).

Highly Pathogenic Avian Influenza: From 1998 until present, the well-publicized HPAI H5N1 has spread throughout Asia, from Hong Kong to China and eventually to India, Indonesia, Vietnam, Thailand and Myanmar (USDA ERS, 2006). HPAI has, however, proven to be a truly double-edged sword to the Philippine broiler chicken industry. On the one hand, the "HPAI free" status of the Philippines in conjunction with its proximity to the large import oriented Japanese market allowed for broiler chicken exports in 2004 and 2005. However, attention surrounding the allegations of a case of AI on a duck farm outside of Manila in 2005 not only put a halt to exports, but also led to heightened domestic consumer awareness and uncertainty regarding the safety of broiler chicken meat. However, testing of tissue samples of the ducks by the Australian Animal Health Laboratory (which serves as the Office International des Epizooties' (OIE) regional reference laboratory for avian influenza) confirmed a low pathogenic avian influenza (LPAI) virus of the H5, H7 or H9 subtypes in the suspect duck samples. According to the Department of Agriculture's Bureau of Animal Industry, the Philippines has since remained free of the HPAI virus, including H5N1.

Animal Disease Monitoring and Control: Following the regional HPAI scare, the Department of Agriculture, in conjunction with the Department of Health and in consultation with private sector stakeholders like PABI, created the Avian Influenza Task Force (AITF). The AITF has developed a four stage preparedness program including the following activities: (1) prevention and monitoring, (2) the establishment of countermeasures, (3) prevention of bird-to-human transmission and, (4) prevention of human to-human transmission (DA, 2005)

While the prevention of the disease is a top priority, resources for such programs remain sparse due to a lack or limited financial resources by the government as well as its financial obligations to implement other disease monitoring and control programs, such as foot and mouth disease[16]. As of late 2005, the DA estimated that their HPAI budget would need to double (from 20 to 40 million pesos) for them to be able to effectively respond to an outbreak. Funding is seen as particularly important and lacking in the areas of barangay (local) HPAI monitoring and training, indemnification in the case of an outbreak, monitoring of smuggled and migratory birds, as well for the tracking and containment of domestic duck populations. On a positive note, in 2005 a new Animal Health Center laboratory capable of testing for H5N1 was opened in Quezon City. Previously, this activity was delegated to the OIE (Office International des Epizooties) referenced laboratory in Australia.

C. Price Volatility Caused by the Gap Between Supply and Demand

Since 1999, 'roller coaster' production scenarios coupled with slow but steady increases in per capita consumption have presented a unique set of opportunities and challenges for broiler industry players. Retail chicken prices from January 2005 through June 2006 were, characterized as stable, while farm gate prices continued to fluctuate. Producers (integrated and non-integrated alike) bear much of the burden of such fluctuations, as consumers are able to easily substitute away from chicken towards cheaper sources of protein such as fish

[15] Highly pathogenic New Castle Disease (BAI, 2005) "National New Castle Control Program Field Manual" Department of Agriculture. New Castle Disease Task Force, 2005.
[16] Funding is sourced from the national budget, USAID, the Philippine charitable organizations and other donors.

and others. However, cultural factors, such as the Christmas holiday season and the summer vacation period, can lead to increases in broiler demand at certain times of the year, despite unfavorable prices. In order to monitor, anticipate and counteract broiler chicken price volatility caused by the pervasive gap between supply and demand, the Philippine government has instituted several "price and volume" monitoring programs in conjunction with consumer and producer groups alike.

Roller Coaster Timeline: 'Roller coaster' production and consumption scenarios have threatened the Philippine broiler chicken industry since the late 1990s. To illustrate this, dressed chicken meat inventories have fluctuated from a low of .3 million kilograms in 2003 to a high of 4.2 million kilograms in 2004 (see **Figure 11**). Broiler chicken prices have followed suit, posting erratic, and at times, double-digit fluctuations. 'Boom and bust' production patterns have been induced by the highly price-responsive nature of producers[17], high and volatile production costs and the East Asian HPAI outbreak. Improved monitoring and communication has emerged in recent times to help prevent the repetition of such erratic production scenarios.

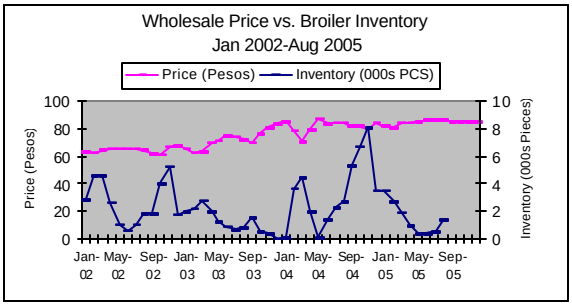

Figure 11 Frozen Inventory and Prices

Figure 12 presents the estimated broiler chicken supply over the past six years. The 2005 estimated dressed chicken supply reached 665,100 metric tons[18], slightly lower than the 681,600 metric tons of 2004. Frozen chicken inventory levels have been used as a key market indicator for the behavior of the demand for chicken meat due to relationship between chicken meat inventory and supply levels. For example, if demand for chicken meat rises relative to supply, frozen chicken inventory declines and prices tend to rise. On the contrary, if supply rises relative to demand, prices tend to decline as inventory builds (see **Figure 11**).

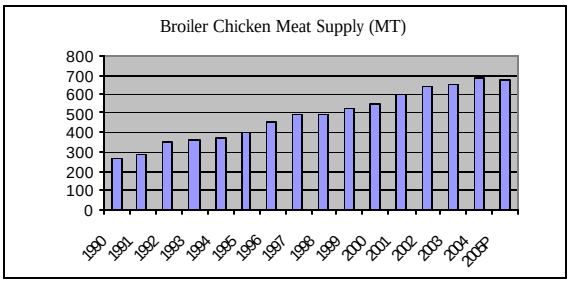

Figure 12 Dressed Broiler Meat Supply (BAS. 2006)

[17] Industry and Rosegrant and Gonzales, 1992
[18] BAS, 2006 Supply Use Accounts

The years 1999-2001 were marked by the 'broiler crisis'[19] where high production costs along with an inflow of low-cost imported broiler meat discouraged producers and caused inventories of frozen chicken meat to nosedive. The ensuing increase in broiler prices did not slow down until the third quarter of 2001. In response to impressive broiler chicken prices, producers increased output in 2002, leading to a pileup of inventory during the latter part of the year. This unanticipated surplus drove live chicken prices down to a double-digit low, from 55 to 39 pesos per kilogram between May and October of that year (BAS, 2006). Overall, in 2002, chicken prices declined by 18 percent.

In response to low broiler prices, supply was again curtailed in 2003. By the end of the year, low inventories along with the Christmas time demand surge caused prices to spike back up by 12 percent. This price fluctuation was unique in that for the first time in history, pork and broiler prices were equal (Price and Volume Watch Meeting, 2003)[20].

By early 2004, the government endorsed the importation of chicken leg quarters from abroad to help offset very low inventory level and high consumer prices. However, the 2003 prices had already tempted producers to heavily load their production capacities for that year. The resulting oversupply of broiler meat, together with heightened awareness of HPAI led to record high inventory levels, and once again caused broiler prices to plummet. Immediately following the HPAI scare, the 'election phenomenon' led to increased demand for chicken, causing inventories to shrink once again to record low levels. During the latter part of 2004 a 'cost-push versus demand' scenario emerged (Palayabyab, 2004) during which prices did not appear to respond to market behavior. As a result, both inventories and prices remained high. This situation was attributed to unusual surge in production cost during the period. The prices of major feed ingredients such as protein meal and corn increased remarkably in 2004. For instance protein meal prices spiked from a relatively stable price of P12 – P13 per kilo up to P 20 - 22 per kg (PAFMI). Likewise, between 2003 and 2004 corn feed prices increased from P6.94 to over P8.48 per kg, or approximately 22 percent (BAS).

Consumer Response: Despite such extreme price fluctuations between 1999 and 2004, per capita consumption of broiler chicken meat has continued to rise in recent times at an average rate of four percent per year. Cultural factors, such as the Christmas holiday season, have resulted in increased seasonal demand for broiler chicken, which tends to peak late in the year. And while consumers do suffer from the price volatility described in the previous section, they nevertheless find themselves at somewhat of an advantage in that they are able to easily substitute away from chicken meat towards pork, fish, eggs and other sources of protein. Industry players indicate that the incidence of 'fickle demand' for broiler meat is especially present in the lower income brackets, although statistical evidence of this is weak[21].

Producer Vulnerability: While producers, and their price responsive nature, have contributed to the industry's boom and bust cycles, they are also the most vulnerable to the effects of such high volatility. Both the integrators and non-integrated commercial farmers alike suffer when a dearth of communication and monitoring leads to price surges and slumps like those of 1999-2004. Industry players have indicated that aside from the direct effect on profits, it has also become especially difficult to locate investors for poultry farm

[19] FAO, 2002 "Country Case Studies of Structural Change in Markets and Policy Environment Impacting the Production, Processing and Marketing of Selected Livestock Products

[20] To illustrate the severity of the problem, just months earlier, in January of 2003, farm-gate hog prices at 81 pesos per kilo were nearly double that of farm-gate broiler chicken prices which were at 42 pesos per kilo (BAS, 2006).

[21] While Cahigas (1992) found that broiler chicken demand is highly income elastic, the Philippine government's Family Income Expenditure Service does not collect data related to per capita consumption of broiler, pork and fish meat at the various income levels.

operations because price volatility along with the erratic weather (typhoons) and the threat of Avian Influenza have made such investments high-risk[22]. Today, producers have learned their lesson and now participate in committee meetings such as the Bureau of Animal Industry's 'Price and Volume Watch Committee.' In addition, other industries, such as the hog production operations, compete with the broiler chicken industry for production inputs such as corn, soya and others, causing them to become increasingly expensive.

Role of Imports on Price Volatility: In 2005, broiler meat imports reached a total of 28,000 metric tons, which contributed just four percent of total domestic chicken meat supply (BAS, 2006). Philippine broiler chicken prices are however much higher than those of its international competitors (see **Figure 4** of previous discussion). Given the small percentage contribution of internationally sourced chicken, its effect on domestic prices is thought to be negligible. Chicken leg quarters however contributed to 50 percent of total imports in 2005. These cuts are primarily imported for use in restaurants, fast food chains, hotels and institutions or for additional processing. In each of these settings they can easily compete given their costs and ability to meet increasingly stringent food safety standards.

Government Intervention: The previous sections of this report have underscored the detrimental effects of both supply and price instability. The tendency of industry players to address past gaps between supply and demand with such a 'wait and see' attitude prevented them from taking any more than 'post mortem' action. After acknowledging the obstacles created by the pervasive lack of transparency by both government and producers alike, various public and private programs have been implemented. The Bureau of Agricultural Statistics is engaged in the monitoring of input and output prices, production and inventory at the national level. The Bureau of Animal Industry coordinates the "Price and Volume Watch Committee" in conjunction with other government agencies, as well as PABI and UBRA members, in order to help balance both producer and consumer concerns. In addition, an Early Warning, or Crisis Prevention System, has been developed which monitors both production and consumption tendencies. Such a system has been in place since the early 1990s, but the emphasis was placed on supply-side indicators. The current system has been updated to not only take into account traditional indicators such as imports of parent and grandparent stock day old broiler chicks, frozen broiler chicken inventory, and the costs of inputs of production, but it also includes additional key demand side indicators such as Personal Consumption Expenditure (or PCE) which acts as a proxy for disposable income.

IV. Trends and Prospects

A. Market Size and Growth

The Philippine Central Bank (Bangko Sentral ng Pilipinas) estimates a 5.7 percent increase in GDP in 2006. While this falls slightly short of the official target growth rate of 6.1-6.5 percent, this year's optimism can be attributed to expected strong agricultural and export performance, increased remittances from overseas workers and increases in personal consumption (Dumlao, 2006). However, high fuel prices, weak investment growth and the recently expanded Value Added Tax (VAT) are seen as potential impediments to growth (Yap, 2006)

Nearly 50[23] percent of the 89 million Filipinos now live in an urban setting, with an average population growth rate of over two percent. The average family income increased modestly

[22] For example, the industry has experienced a shortage investment in this area is seen as very risky as it takes 5-6 years for investors to see returns on the capital required for tunnel ventilated broiler grow-out houses. Investors lack confidence to invest because thanks to the AI threat, price volatility and severe weather/typhoons, "anything can happen in the next five years" (Industry Source, 2006).
[23] http://www.census.gov.ph/data/pressrelease/2003/pr0382tx.html

at two percent from 2000 to 2003 (NSO-FIES, 2003). Population growth, coupled with demographic transition, has led to greater total Filipino food and meat consumption. And, while the percentage share of income spent on food products has decreased in recent times, from 44 percent in 1997 to 42.6 percent in 2003, net expenditures have continued to rise (NSO-FIES, 2003). Yearly per capita consumption of broiler meat posted the second fastest growth rate among meat products, as it increased from 7.2 kgs per capita in 2000 to 7.85 kgs per capita in 2005 (BAS, 2006). Likewise, total dressed broiler meat consumption increased from 549,902 MT in 2000 to 669,411 MT in 2005 (BAS, 2006).

Food Service and HRI Consumption (Hotels, Restaurants and Institutions): Despite the important role of wet markets in broiler marketing (68 percent)[24], recent trends indicate that this industry's current and future growth are, and will continue to be, dependent on marketing via fast food chains, supermarkets and HRI (hotels, restaurants and institutions). In addition, Filipinos are increasingly aware of issues relating to health and food safety. Together, demographic transition and changes in preferences have spurred greater reliance on fast food establishments, restaurants and modern retail outlets (such as supermarkets) for daily food needs. From 2000 to 2005, the percentage of family income spent on food consumed outside the home (i.e. in restaurants, institutions and fast food establishments) increased from five to well over six percent[25]. This is consistent with double-digit growth in both fast food establishment outlet openings and sharp increases in fast food outlet broiler demand[26]. Industry sources indicate that the growth of such establishments is currently over 20 percent.

The rapid rise of fast food establishments in Metro Manila is being replicated, albeit on a smaller scale, throughout the country. This phenomenon has important implications for the broiler industry, as chicken based products are quite popular in such establishments. Highly income responsive fast food and restaurant expenditures were valued at P90 billion ($1.8 billion) in 2001, with an average growth rate of 15-20 percent[27] (despite the disturbance caused by the Asian Financial Crisis). Industry players indicate that such growth has been sustained to present times. Unlike many of the import dependent ingredients of fast food menu items - such as beef and frozen french fries - broiler chickens are sourced both domestically[28] and internationally. The wide selection of broiler-based products available at such establishments (from chicken nuggets and fried drumsticks to chicken breast sandwiches) coupled with the sector's impressive growth rate, indicate a lucrative market for fresh, frozen and processed broiler meat products in the future.

As mentioned previously, food safety has become a hot-topic among both consumers and retailers. In response, modern retailers are increasingly imposing stringent requirements on the meats they sell in order to maintain their reputation and market share at home and abroad. Most will only purchase from HACCP, GMP and ISO certified producers and NMIS certified dressing plants. Fast food and supermarket establishments also have size and weight requirements for dressed broilers. Such establishments source their broiler meat from commissaries and warehouses with strict traceability (and other) requirements. This has inadvertently led to a divergence in the domestic market, as non-integrated commercial farmers often cannot ensure the trace-ability of their product from farm to fork[29].

[24] BAS, BAI and Industry Sources, 2006
[25] FIES, 2003 data and industry player projections.
[26] Industry Source, 2006.
[27] Ana Cecilia S. Palma "An Update on the Philippine Fast Food Industry" Food and Agri-business Monitor October 2001 p. 2
[28] Palma, p. 9 "An Update on the Philippine Fast Food Industry"
[29] This is the case unless the non-integrated commercial farmer has been contracted by an integrator for part of the production process in the form of toll servicing.

International Trade: As of July 30, 2006 the Philippines already had utilized 60 percent of its Minimum Access Volume (MAV) for poultry meat (BAI, 2006). Industry sources indicate that aside from the emergency 5000 MT special importation of chicken meat in 2004, this is anticipated to be the first year broiler chicken will be imported out-quota since the MAV imposition in 2000 (see GAIN RP5033). Large import volumes have been required to compensate the domestic markets for the slow 2006 domestic production levels attributed to uncertainty regarding HPAI, feed prices and others (Pascual, 2006). In-quota and out-quota tariff levels remain harmonized at 40 percent for fresh and chilled chicken meat for all trade partners. Industry players have repeatedly acknowledged that imported broiler meat remains cheaper than its domestic counterpart, even after the in-quota tariff rate of 40 percent has been applied— an obvious concern of producer groups PABI and UBRA. Moreover, in 2002, the Philippines imposed a price-based Special Safeguard (SSG) duty over and above the regular tariff of 40 percent on out-of-quota chicken imports, specifically chicken cuts and offals falling under H.S. 02071492.

Despite high production costs and 'boom and bust' production tendencies, the Philippine broiler chicken industry, remains outward looking. Interest in international markets has been fueled in recent times by the large, growing and high valued East Asian broiler chicken market, which has been plagued with sporadic sourcing by Thailand, Malaysia and Indonesia. In 2004, the "Avian Influenza free" status of the Philippines granted it access to the lucrative Japanese Yakitori chicken industry. That year poultry meat exports totaled 1,560 MT. The identification of a suspect duck outside of Manila in July of 2005 led to a temporary ban on export operations. This ban was recently lifted in May of 2006. The Philippines has since obtained an International Veterinary Certificate from the Japanese Ministry of Agriculture, Forestry and Fisheries to export raw chicken meat cuts (BAI, 2006). Since then, integrator San Miguel Foods and a local export-processing firm, have resumed exports with Swift Foods and Tyson Agroventures eager to jump on the bandwagon. San Miguel Foods, Inc. expects to ship 1,000 MT of chicken to Japan by the end of the year (Felix, 2006). Aside from Yakitori chicken, industry players have expressed interest in penetrating overseas Halal markets with chicken cuts and sausages using both domestic and imported broiler chicken meat.

While the industry has its eye on exporting fresh, frozen and chilled chicken meat, high production costs and inconsistent supply may not allow such ventures to be competitive in the long run. Given the abundant supply of cheap labor, the Philippines may, however, be in a position to take advantage of the robust, and growing, East and South East Asian markets for processed and value-added products in the form of prepared and preserved chicken meat (see **Figure 13**). Japan, for example, doubled its imports of such goods between 2000 and 2005 from 151 MT to 329,000 MT, respectively (ERS, 2006). A local processing firm has already successfully pursued this sort of venture by importing mechanically de-boned meat and chicken leg quarters, duty free and outside of the MAV, via the Philippine Economic Zones. High valued and value added processed chicken products are then re-exported after adding the 'Midas touch' of Philippine labor (Ambalada, 2006).

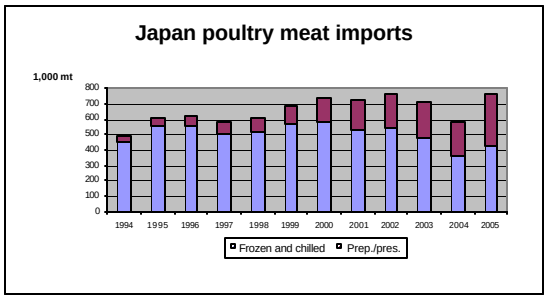

Figure 13 Source: USDA/ERS using World Trade Atlas, 2006.

B. Outlook for Costs of Production and Price Competitiveness

Overall, broiler production costs remain high. This is due in part to the industry's import dependent nature (for day old broiler chicks, feed inputs and capital). Soya and corn are rigid inputs to the feed used in the broiler production sub-system. Although prices of inputs such as corn and soybean meal have remained stable, high levels of protectionism for the domestic yellow corn industry play an important role in hurting the overall industry's price competitiveness.

Yields of the import dependent yellow corn industry have been on the rise in recent times, and 2006 production levels are expected to exceed those of 2005 (see **Figure 14**). Average prices for the first two quarters of 2006 (11.38 pesos per kilo) are much higher than the same time last year (8.92 pesos per kilo[30]), which has been identified as an important factor in the year's meager broiler production. Imports increased dramatically in the first quarter of 2006, reaching 149,000 MT (BAS, 2006), well above last year's level of 2,500 MT during the same period. As a result, corn MAV utilization may continue to expand beyond 2005 rate of 37 percent (see **Figure 15**). In order to augment domestic supply and lower corn prices, feedmillers have in the past requested the Department of Agriculture through the National Food Authority to import yellow corn duty-free, thus falling outside the MAV.

Philippine Corn Production and Prices			
YEAR	**Volume (MMT)**	**Avg. Yellow Corn Prices (Pesos/Kg)**	**Ave CIF Price of Imported Corn**
2001	4.5	8.63	5.75
2002	4.3	8.21	6.98
2003	4.6	8.62	6.10
2004	5.4	10.35	14.64
2005	5.2	9.31	7.60
2006	N/A	11.38	5.47

Figure 14 Source: Philippine Department of Agriculture
World Trade Atlas

MAV UTILIZATION RATE 2003-2005							
HS	Description	2003	%	2004	%	2005	%
Code		MAV (MT)	Used	MAV (MT)	Used	MAV (MT)	Used
1005	Corn	202,447	24	212,119	0.2	216,940	37

Figure 15 Source: Department of Agriculture

Import dependent[31] soybean and soybean meal (SBM) prices remained relatively stable in 2005 and early 2006 (**Figure 16 and 17**). SBM imports reached a five-year high in 2005, which may have been to compensate for five-year low soybean imports (USDA, 2005). This upswing is not entirely consistent with lower overall anticipated poultry production levels in 2006. However, such levels may be attributed to its role as the primary protein source for aquaculture, other poultry and livestock feeds.

[30] BAS, 2006
[31] The Philippines does not produce any soybeans, and with the exception of a few SBM crushing facilities, the country relies entirely on imports from its SBM requirements.

YEAR	SOYBEAN MEAL IMPORTS (MT)	SOYBEAN IMPORTS (MT)	US Soybean Meal FOB Prices ($/Kg)
2001	1,061	316	.18
2002	1,291	264	.19
2003	1,251	289	.19
2004	1,160	284	.25
2005	1,425	146	.22
2006[32]	552	55	.21

Figure 16 World Trade Atlas, 2006

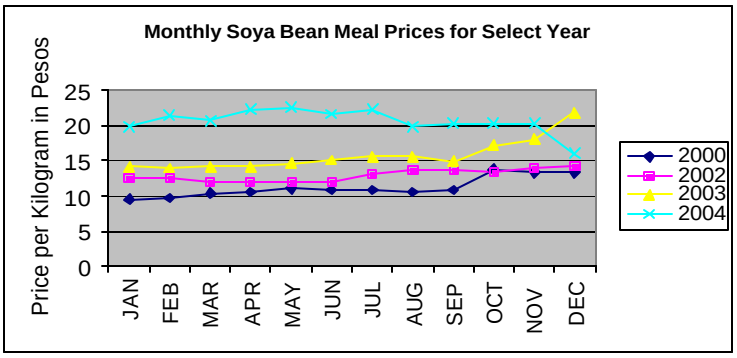

Figure 17. BAS, 2006

In order to address the problems of high production costs, integrators have begun to alter their business practices. First, some have changed their grow-out process by importing less Day-Old-Chicks (DOCs) and maintaining (or increasing production) by either growing larger birds, extending the laying span or through the setting of junior eggs [junior eggs are small eggs between 48-51 grams]. Second, there has been a re-shuffling of the roles of PABI, UBRA and other non-integrated commercial producers. While some PABI members remain fully integrated, others have found it to be more profitable to halt operations after the production of DOCs and contract-out the remaining production stages to independent growers while maintaining the mother company's name. Simultaneously, some UBRA members have found it to be more profitable to use integrated production methods. As a result, future industry analysis will be required to qualify the role of companies that are integrated by affiliation (PABI) versus integrated by business type (in terms of the actual agribusiness model used) since the current situation is somewhat deceptive in nature. Integrated producers (in terms of business type) produce 75 to 80 percent of broiler meat. However, PABI members themselves are believed to only produce between 65 to 70 percent of broiler meat as a result of the aforementioned reshuffling. In addition, the current use of DOC imports as an indicator of future production levels may need to be reassessed.

This 'state of flux' caused by the ubiquitous desire to decrease costs and increase price competitiveness via production efficiency has led to the increased use of toll-servicing by integrated broiler-producing agribusinesses. This sort of arrangement entails the contracting out of specific stages of the production process (such as the hatching of day old broiler chicks, broiler grow-out, transportation, and broiler chicken dressing) or the entire process beyond DOB breeding (Industry players, 2006). This in turn has led to the increased role and responsibility of small and medium sized players in the broiler meat production industry (Mojica-Sevilla, 2006). In turn, such firms have been presented with not only better

[32] January-April, 2006

opportunities, but also additional obstacles. For example, some 'integrators' have specific size and quality requirements, while others require exclusivity[33] of their toll-service partners.

Animal Health: Since the outbreak of HPAI in East and Southeast Asia, the Philippines has had a watchful eye on both commercial and backyard poultry producers. Steps have been taken toward the listing of poultry farms and their capacity and the anticipatory compartmentalization of the Philippines in preparation for indemnification of the poultry market in case of AI (BAS, 2006). Despite the "HPAI scare" of 2005, the Philippines has enjoyed its "bird flu free" status. Public-private industry monitoring partnerships such as the Avian Influenza Task Force and the Bureau of Animal Industry's 'Price and Volume Watch Committee' have evolved to include HPAI as a key concern. As previously discussed, several factors continue to leave the Philippine broiler industry vulnerable to the disease including the proximity of backyard and commercial raisers and the sharing of precious resources with other animal health prevention and treatment programs. The HPAI status of the Philippines will continue to interest both U.S. feed, day old broiler chick and broiler meat exporters. Should an outbreak occur, feed input demand will decrease as will the importation of DOCs. Broiler meat products involved in transshipment arrangements (such as export processing zones) through the Philippines likewise depend on its "bird flu free" status.

V. Conclusions Observations

Consumption has been on the rise in recent times. While wet-markets continue to dominate the industry in terms of sourcing of fresh produce, sales via modern retail outlets (such as super markets and hypermarkets) are on the rise. In addition, the Philippine appetite for broiler chicken products via restaurants, and fast food outlets will likely continue to grow given an increasingly urban population and demographic changes. Consumption by the lowest income brackets is however highly income and price elastic, presenting challenges to producers and retailers alike.

HPAI free status gives the country a competitive edge within the region, allowing it to potentially increase exports to Japan and other lucrative markets. However, the opening of such markets does not come without important constraints. The Philippines must develop effective AI prevention and control measures capable of addressing the concerns of both domestic and international stakeholders.

High and volatile production costs will continue to impede market development. This is in part due to the highly import dependent nature of the industry. Feed ingredient diversification may prove to be a long run solution as will the improved timing of imports used to supplant domestic feed input production. The industry as a whole will benefit from the continued development of the Early Warning System developed by the Bureau of Agricultural Statistics.

The export-oriented industry will be required to continue improving domestic production levels and costs. Weak domestic production levels and high production costs have created room for importation of chicken meat for additional processing and re-export via the various Philippine economic zones.

[33] Exclusivity in this case refers to an arrangement in which the contracted SMEs are required to exclusively serve the integrated producer that contracted them to undertake a specific segment of the broiler production process.

Observations:

(1) The Philippine broiler industry remains globally uncompetitive because of protectionist domestic corn policies, which allows the internal corn price to be above world levels. While this means the Philippines will not be able to have significant exports, it also hampers the industry when domestic consumer prices cannot be raised.

(2) Although domestic yellow corn production has increased in recent times, additional liberalization of this market may allow the feed industry and other downstream actors to avail of reduced production costs. Industry players will also benefit from the continued public and private support for the BAS Early Warning System for broiler input and meat costs.

(3) Commercial grower production has in part been limited by of a lack of capital investment. More government support for improved production facilities could improve broiler FCR. The industry could likewise use additional investments for export-oriented endeavors such as capacity building for 'farm to fork' traceability (although this should be done with caution as the export market is dependent upon the HPAI free status of the Philippines).

(4) The growing role of SMEs in the industry via toll serving presents additional obstacles for producers and government alike. Attention should be paid to the nature of their contractual relationships with 'integrators.'

(5) Ensuring an accessible and "fully linked" cold chain was identified as a factor affecting the sector's performance. Cold chain handling facilities are an integral component of the pre- and post- production stages and within distribution facilities (including the retail setting). This will continue to present challenges to the industry, especially as consumers become more aware of food safety issues, the increasingly stringent requirements of fast food and restaurant chains and through the growth of the modern retail sector. Improvement in the cold chain infrastructure is desirable.

(6) Continued government support for HPAI prevention and control measures should remain a top priority. This will dictate the future prospects of broiler meats that are exported or 'transshipped" through the Philippines. One potential solution could be in the form of a protocol agreement with trade partners to ensure that exports of cooked chicken broiler products are not disrupted in the event of a HPAI scare, similar to the Thai agreement.

I. Cost of Production May 2005		
1. Cost of Stock/DOB		8.24
2. Land rental		1.76
3. Feeds		
	Corn	11.08
	Other	20.56
4. Biologics		2.06
5. Labor		0.84
6. Brooding Expenses		0.44
7. Overhead Cost		
	Electricity/Water	0.59
	Repair/Maintenance	0.29
	Misc	0.29
8. Depreciation		0.76
9. Mortality Cost (5%)		0.41
	Sub-total	47.32
10. Cost of Money (2%)		0.95
Total Cost		48.27
	Margin	10.73
Live Farm Price		59.00
II. Post Production Cost		
11. Purchases/Farm Price		59.00
12. Land Transport/Handling		0.88
13. Incidental expenses		0.07
14. dressing losses		8.86
15. Dressing Cost		
	Dressing fee	2.94
	Quality control	0.1
16. Delivery Cost		0.67
17. Marketing and Admin Cost		1.5
18. Shrinkage (1% Dressed Weight)		0.85
19. Other Costs		0.25
	Sub total	75.11
20. Cost of Money (2% of sub total)		1.5
Total Cost		76.61
	Margin	8.14
Dressed Wholesale Price		84.75
III. Retail Cost		
21. Purchases/Retail		84.75
22. Stall Rental		1.1
23. Labor/Vendor		1.47
24. Market Fee		0.15
25. Shrinkage (1% dressed weight)		0.85
26. Other Cost		0.5
	sub-total	88.82
27. Cost of Money (2% of subtotal)		1.78
Total Cost		90.59
	Margin	9.37
Dressed Retail Price	**Pesos per Kilo**	99.96

Figure 5. May 2006 Production Costs. BAI, 2006.

References:

Technical disease cards by World Organization for Animal Health
HPAI
http://www.oie.int/eng/maladies/fiches/a_A150.htm

Invalidation of H5 strain of AI by OIE
http://www.oie.int/eng/info/hebdo/AIS_54.HTM#Sec0

Abuel-Ang, Pia. Philippines Trade Policy Monitoring MAV update. March 3, 2006. Gain Report. US Department of Agriculturel

Abuel-Ang, Pia. Personal Communication. July, 2006. United States Department of Agriculture. Makati City, Philippines.

Ambalada, Jet B. Vice President Royal Cargo Combined Logistics, Inc. and Marzell, Inc. Personal Communication June/July 2006. Manila, Philippines.

Bureau of Animal Industry, Marketing Division 2006.

Bureau of Agricultural Statistics, 2006.

BAS "Performance of Philippine Agriculture: January – December 2005"

Bureau of Agricultural Statistics "Chicken Industry Performance Report January- December 2005" May, 2006 Republic of the Philippines Department of Agriculture, Quezon City, Philippines.

Buzon, Mauvir. San Miguel Foods Inc. Personal Communication July 11, 2006 Ortigas, Manila, Philippines.

Pascual, Ruben "The Philippine Broiler Industry in 2004-2005" at University of Asia and the Pacific Midyear Food and Agribusiness Conference "Philippine Food and Agriculture: Demand Squeeze and Cost Push?" 22 June, 2005 Ortigas, Manila, Philippines.

Pascual, Ruben. "The Philippine Broiler Industry in 2005-2006" at University of Asia and the Pacific Midyear Food and Agribusiness Conference "Risks and Gains in Philippine Food and Agriculture" 27 June, 2006. Ortigas, Manila, Philippines.

Palma, Ana Cecilia S. "An update on the Philippine Fastfood Industry (First of Two Parts)" Center for Food and Agri Business University of Asia and the Pacific. Food and Agribusiness Monitor October 2001.

Palma, Ana Cecilia S. "An update on the Philippine Fastfood Industry (Last of Two Parts)" Center for Food and Agri Business University of Asia and the Pacific. Food and Agribusiness Monitor November 2001.

Gaerlan, Manolette. Bureau of Animal Industry of the Philippines. Personal Communication. July 7, 2006.

Yanson, Nenette. Bureau of Agricultural Statistics of the Philippines. Personal Communication. July 10, 2006.

Yanson, Nenette. **Thesis**

Mojica-Sevilla, Florence. Personal Communication. 10 July, 2006. University of Asia and the Pacific.

BAI, Marketing Division 2006.

Bureau of Agricultural Statistics "Chicken Industry Performance Report January- December 2005" May, 2006 Republic of the Philippines Department of Agriculture, Quezon City, Philippines.

"International Veterinary Certificate" obtained from the Quarantine Department of the Bureau of Animal Industry →Animal Health Requirement for the poultry meat and their products to be exported to Japan from Philippines also available online at
http://www.maff-aqs.go.jp/tetuzuki/eiseijoken/chicken/asia/philippines/16-1014.pdf -

World Broiler Overview 2004 (re: Thai Japanese protocol agreement)
http://www.fas.usda.gov/info/circular/2004/04-03LP/broileroverview.html

http://www.doa.go.th/en/ re: broiler protocol agreement from 2004 for cooked broiler chicken meat between Thailand and Japan

"Percentage Distribution of Total Family Expenditure by Major Expenditure Group: 2000 and 2003." Family Income and Expenditure Survey Final Results, National Statistics Office. 2003.

Landes, M, Persaud S., and Dyck, J. India's Poultry Sector Development and Prospects. USDA/ERS WRS-04-03

Chang, Hui-Shun. Overview of the World Broiler Industry: Implications for the Philippines. Working Paper Series in Agricultural and Resource Economics. University of New England . 2005.

http://www.da.gov.ph/agribiz/broiler.html

Palabyab, Rita Imelda. "Broiler Sector: Cost-Push vs. Demand?" Pasig City: University of Asia & Pacific, 2004.

Cahigas, Michael Romero. "The Philippine Poultry Industry: Performance, Forecasts and Policy Implications". Philippines, 1992.

Resontoc, Leonilo R. et al (Eds.) National New Castle Disease Control Program Field Manual. Department of Agriculture Bureau of Animal Industry. New Castle Disease Task Force. Quezon City, Philippines. 2005.

Dumlao, Doris. "BSP poll sees 5.3% economic growth in '06." Inquirer. July 30, 2006.

Yap, Karl Lester. "Lower Growth Expected" Business World. August 3, 2006.