



The Economics of Secondhand Retail Trade: An Analysis of the Market for Ukay-ukay

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ABSTRACT

In recent years, the market for secondhand garments has flourished from its considered capital, Baguio City, province of Benguet. Although Republic Act number 4653 (ratified July 1966) has been enacted, there is no clear implementation of this law (e.g., confiscation and/or burning of such imported commodities).

It is clear that people see this market as an alternative to counterpart goods burdened with soaring prices; however, with the invocation of laws that prohibit importation and sale of secondhand garments, consumers of such commodity have different reactions and suggest alternative solutions so as not to be affected negatively (in terms of the economic dimensions of their lives). This paper tries to look at these issues by quantifying consumer surplus in this market and estimating the market demand. Such will then give some overview of the dynamics of such commodities' consumers and suppliers.

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In 2001, the Philippines imported US\$2.29 billion or PhP116.7 billion worth of consumer goods—approximately 6 percent higher than the previous year's imports of US\$2.25 billion (or PhP104.4 billion). Both values were based on the prevailing exchange rate at that time (*Philippine Star* 2000). Although the values already show a significant amount, they do not yet include other foreign commodities illegally entered into the country.

*Ukay-ukay*¹ is most commonly used to refer to the industry that caters to the sale of secondhand imported garments. It originated in Baguio City, where it has been typically called *wagwagan*², and was later adapted in other places. The industry first began with stalls at the sidewalks, and in a span of two years, reports account that the ukay-ukay business already generates a gross income of PhP1.2 million daily (Cabreza 2001). Later on, *wagwagan* became the colloquial *wagwag*, which has the same meaning as ukay-ukay.

Wagwag items, which usually originate from Hong Kong and the United States, enter the Philippines in a manner different from that of traditional imports. These goods are actually transported to different stores in Baguio City as well as places in Metro Manila via *balikbayan* boxes. Contrary to authorities' notion that these commodities are donations from foreign countries, wagwag items are actually purchased from Hong Kong-based Salvation Army's rummage sale sites. Those from the United States came from neighborhood home garage sales (de Castro 2001). Once in the Philippines, these are then sold at prices lower than those of "traditionally" imported goods. Since these are used garments, they are sold at less than half their prices (Cabreza 2001).

INTRODUCTION

Ukay-ukay may be considered a "special" type of good available in the market. First, it has a different marketing and sale process. Second, how it enters the market is unique. When such goods are brought into the country, records would show that some were not really intended for sale: The government would maintain that these are either donations or aid from foreign countries. Others are recorded as *pasalubong* for Philippines-based relatives.

There are various reasons consumers still buy these goods. One is their low prices when compared to substitute and complementary goods.

¹ *Ukay-ukay* - commonly referred to as the "secondhand" ready-to-wear clothes, shoes, and bags sold at a much lower price compared to the new and branded ones. It is also a colloquial term that implies one has to dig deep into piles of goods like clothing to choose what he or she wants to purchase. This term comes from the Cebuano-Visayan dialect (*Philippine Star* 2002).

² *Wagwagan* - an Ilocano term used to describe items that one has to dust off before purchase; common term used in Baguio City. In colloquial terms or Tagalog adaptation, this word became known as *wagwag* (*Philippine Star* 2002).

Objectives of the study

This study aims to analyze the ukay-ukay market and its structure, as well as its social, cultural, and institutional influences. The specific objectives are:

- ◆ to describe the consumers' market behavior toward the presence of ukay-ukay and to identify the factors that influence individuals who patronize these goods;
- ◆ to analyze the behavior of other products and goods that may be considered as substitute and complementary goods; and
- ◆ to measure the consumer surplus as well as the gains that individuals get from the low-cost secondhand retail trade.

The (secondhand) markets and the state

Ukay-ukay nowadays is a very affordable source of fashionable yet durable clothing material for those with relatively low incomes. Some people would resort to buying ukay-ukay items because the latter are relatively homogenous with the brand new garments and accessories that may be bought in relatively high-class stores and shopping malls.

Philippine-made textiles and garments are said to be 30 percent more expensive than their counterparts in the market, due partly to the inefficient local production and technology processes as well as their relatively low productivity (Go 2002). The textile and garments industry still needs adequate provisions for the training of as well as incentives for workers, technological efficiency, development in market production, and creation of regulating bodies. It will be tougher for these local firms to compete against the ukay-ukay sellers.

To protect the local garments, textiles and clothing industries, President Gloria Macapagal-Arroyo banned the entry and sale of ukay-ukay items in the market. This created discontent among their patrons, who look at ukay-ukay goods as the most affordable in the market (*Philippine Star* 2002). This also entailed some implementation cost on the side of the government. While authorities have every legal right to confiscate and even burn such items, ukay-ukay stall owners managed to remain unscathed by relocating outside Metro Manila—to locations not usually monitored by the Department of Trade and Industry (DTI) and the Department of Social Welfare and Development (DSWD).

FRAMEWORK AND METHODOLOGY

Some basic economic concepts

One of the core concepts in market demand analysis is that of consumer surplus (CS). Consumer surplus is one of the measures of value in utility: the paradox where there is excess between the consumers' utility value versus the actual recorded market value. This is one of the crude measures of social welfare on the part

of the consumers; i.e., the excess of what the consumers are willing to spend to buy secondhand clothing and the actual prices of these goods in the market, which is given by

$$\text{Total CS} = \sum_{i=1}^n [f(x_i) - p(x_i)] \quad (1)$$

Where: $f(x_i)$ = the market demand function for ukay-ukay of the consumer at the i^{th} good
 $p(x_i)$ = the actual market price of the good that the individual pays, in pesos
 n = number of the goods (grouped in types) available in the market

and by taking the limit of the Riemann Sum as n approaches infinity (Leithold 1990),

$$\text{total CS} = \int_0^{x^*} [f(x) - p(x)] dx \quad (2)$$

Where: $f(x)$ = the market demand function for ukay-ukay
 $p(x)$ = the price line of the market
 x^* = the equilibrium quantity of the market demand function

Alternatively, the CS equation can be simplified by the Fundamental Theorem of Calculus into

$$\text{total CS} = \int_0^{x^*} \int_{p(x)}^{f(x)} dy dx \quad (3)$$

With the establishment of the relative prices in the market as well as the individuals' preferences, the market demand curve for ukay-ukay can be estimated using the data from the survey to be conducted as well as the corresponding prices of these goods. Consider as well the corresponding elasticities in the prices of related goods and the income of individuals when dealing with the changes in prices of ukay-ukay.

Data sources

Data for the study were primarily composed of interviews with those who are engaged in the business of secondhand retail trade: those who are selling ukay-ukay goods and those people who earn their living participating in this market. Moreover, there is an emphasis on those who patronize these goods, with varying rates of purchases. One hundred random interviews in the marketplaces of Baguio City were conducted.

The ordinary least squares regression

The market demand for ukay-ukay was estimated using a regression model given by

$$d(x) = \alpha + \beta_1(x_1) + \beta_2(x_2) + \beta_3(x_3) + \beta_4(x_4) + \beta_5(x_5) + \varepsilon \quad (4)$$

- where:
- $d(x)$ = the market demand function for ukay-ukay
 - α = estimate coefficient of exogenous market demand
 - x_1 = income of the individual
 - x_2 = prices of ukay-ukay in the market
 - x_3 = prices of related goods in the market
 - x_4 = availability of ukay-ukay relative to location
 - x_5 = gender of the consumer
 - β_i = coefficients to be estimated ($1 \leq i \leq 5$)
 - ε = error term

This model was used to describe certain relationships of the market demand to each of its attributes, *ceteris paribus*, and one attribute at a time. Each variable was incorporated in the model for the following reasons:

- ◆ The income of the individual and the prices of ukay-ukay and other related goods available in the market are the core variables considered in the model; these variables will figure significantly in the demand estimation model;
- ◆ The availability of ukay-ukay items relative to location is important in analyzing the opportunity cost of time and effort spent when going to places where consumers view some "savings" can be gained by buying there; and
- ◆ The consumers' gender is considered so as to determine whether males differ in their preferences for ukay-ukay items relative to females and to calculate the respective rates (if there exists such difference).

For the elasticity analysis, the model will be transformed into a double logarithmic market demand function given by

$$\ln d(x) = \ln \alpha + \beta_1 \ln(x_1) + \beta_2 \ln(x_2) + \beta_3 \ln(x_3) + \log \varepsilon \quad (5)$$

with the "economically-relevant" variables for the corresponding elasticities to be interpreted.³

³Such variables were only considered for income, own-price, and cross-price elasticities, respectively.

DATA ANALYSIS AND RESULTS

An overview of the secondhand retail market

Ukay-ukay retail and sale business is considered to be legal in Baguio City. In general, ukay-ukay businesses are licensed by the city government to do trade, wherein their items are classified as "imported secondhand dry goods." Meanwhile, those who are already involved in selling native goods and pasalubong but also introduced ukay-ukay items in their stores maintain their original licenses. On average, both the business permit and licenses amount to PhP3,000 for the starting month of operation, and a yearly PhP1,000 license renewal fee is required by the city government.

The cost involved in establishing an ukay-ukay outlet is relatively minimal. On the average, a stall is about three by four meters in area. Every stall has one worker (a saleslady or a salesman) who manages the stall and facilitates the sale. At most, a stall could have two salespersons.

In addition to labor wages (pegged at around PhP2,000 to PhP5,000 per month), electricity expense is the other cost involved in the operation of stalls. Table 1 summarizes the financial operating costs of ukay-ukay stalls in Baguio City.

Table 1. Estimated operation costs of ukay-ukay stalls, Baguio City, 2002

Item	Minimum costs (in PhP)	Maximum costs (in PhP)
Labor wage (monthly)	2,000.00	5,000.00
Electricity usage (monthly)	50.00	500.00
Licenses and permits ¹ (yearly)	(renewal) 1,000.00	(application) 3,000.00
Stall rent (monthly)	5,000	20,000

¹ Costs include business permits and mayor's licenses; however, sales tax is not verified to be inclusive across retailers.

Source: Primary data (survey and interview).

Ukay-ukay clothing is packed in box sizes similar to those standard pasalubong boxes. Box sizes, though, differ by size and clothing quality. Table 2 summarizes the value per unit purchase of secondhand clothing according to quality and size.

Stalls generally prefer purchasing the "not so good" type, since they sometimes get lucky to get good quality clothes in the box. Retailers also note that at times, this is the only type of quality and box size available for purchase anyway. The regular box has a cubic dimension of one meter on each side, while the jumbo box is about 0.25 meters to 0.5 meters bigger than the regular-size box.

Ukay-ukay clothing also comes in what are called "selections." This special category refers to secondhand clothing that have been segregated upon their

Table 2. Value per unit purchase of ukay-ukay and wagwagan clothing according to quality and size, Baguio City, 2002

Clothing quality ¹	Size (value in PHP) ²	
	Regular	Jumbo
"Good" – the highest quality of ukay-ukay clothing.	11,000.00	15,000.00
"Not So Good" – the second clothing quality type of ukay-ukay; in general this is a mix of different clothing types and quality that is not intended to be sorted.	8,500.00	10,000.00
"Yagyag" – the lowest quality type of ukay-ukay clothing; some describe them as "near rags type" clothing; also the cheapest type of ukay-ukay clothing that can be purchased.	3,000.00	n/a

¹ The categories are based on the classifications of wholesalers when purchases are made in the ports of entry.

² The basic unit of purchase of clothing is the balikbayan box. The regular size is 1 meter in cubic dimension, while the jumbo size measures 1.5 meters in cubic dimension.

Source: Primary data (survey and interview).

arrival at their respective ports of entry. They have been segregated because they have the highest quality among all secondhand clothing and are sold together with their brand new counterparts. The brand new counterparts are usually export overruns and small and medium enterprise goods (i.e., those made by local tailors and seamstresses).

On the average, a small stall purchases two to five regular boxes and one to three jumbo boxes monthly, and changes their requests depending on the market demand for clothing. The existing market demand for ukay-ukay clothing in Baguio City comes from a diverse pool of individuals of different social status as well as ethnic origins and residential locations.

At the time of data gathering, Baguio City had six big establishments that house the sale and retail of the secondhand clothing. These buildings used to house other business entities such as sports and recreation facilities, and food centers. There are also other isolated establishments and shops around the plaza offering the same varieties of secondhand clothing. In Table 3, these six houses are named and given short descriptions based on data in published articles, tourists and locals' descriptions, and the researcher's accounts.

Ukay-ukay clothing experiences a seasonality in its demand. According to interviews of some retailers, the peak season is from October to May (Christmas season and summer). Depending on the peak season of demand for ukay-ukay, an

Table 3. Six main markets for ukay-ukay in Baguio City, 2002

Name	Location and Description
Bayanihan	The former <i>Hotel Bayanihan</i> , located in front of Burnham Park across a Caltex Station on Otek corner Shanum Streets
Cypress	Along Abanao Road, across National Bookstore
Session Road	Site where the former Skyworld Building is found. This renovated building is mainly made of planks of wood iron frames, and galvanized iron sheets, giving it the appearance of an old factory building
Hilltop	Situated at the back of Baguio City's wet market; comprised of three floors of secondhand clothing
Harrison and Eastpark	These two houses are located just in front of the Burnham Park, separated by a road leading to the old Skyworld Building. Of all houses, these two offer the branded ukay-ukay clothing, and their prices are relatively the highest among ukay-ukay shops in Baguio City

Source: "The Wonderful World of *Ukay-ukay*" by Becky Kho and Jeannee O. Reyes in *Good Housekeeping* (2002).

average of five to 10 regular boxes or two to five jumbo boxes are purchased by each stall every month.

Retailers generate about PhP20,000 to PhP50,000 as revenues per month. During the peak sale season, revenues generally tend to increase. On the average, a small stall can generate between PhP500 and PhP1,000 as daily revenues; however, some report zero sales on certain days.

Ukay-ukay clothing has been divided into 10 clothing subgroups. For the purpose of the study, the specific interest would be on clothing (i.e., excludes other commodities that can be classified under ukay-ukay and wagwagan (e.g., toys, sleeping materials, carpets).

The 10 subgroups are described in Tables 4 and 5, with the corresponding prices for every classification of clothing quality. These prices are also compared to the prices of their brand new counterparts. The column showing the actual prices are the most common prices quoted by famous shops located in Metro Manila's major malls.

DESCRIPTIVE STATISTICS OF SURVEY DATA

The survey conducted during the last week of October 2002 in Baguio City generated data from 100 respondents. Respondents were not only composed of local residents of Baguio City, but of individuals (usually tourists) coming from Northern and Central Luzon, Cagayan Valley, Southern Tagalog, and as far as Mindanao. The general categories and characteristics of the sample are described in Figure 1.

Table 4. Minimum and maximum retail prices (in PHP) by clothing quality and type, Baguio City, 2002

Clothing type ¹	Quality						Actual prices ²
	Good		Not so Good		Yagyag		
	Min	Max	Min	Max	Min	Max	
T-Shirts and Polo Shirts	120	350	100	180	30	70	450
Pants	150	500	100	250	50	75	600
Short Pants	100	200	50	100	10	40	150
Formal Dresses/Attire	400	1000	250	350	n/a	n/a	2,000
Children's Clothing	100	350	50	100	20	50	500
Intimate Wears (underwear)	50	100	30	50	n/a	n/a	200
Sports Attire	150	400	100	300	50	100	1,000
Men's/Ladies' Footwear	450	2,500	200	850	50	150	1,000
Bags	650	3,500	200	1,200	100	300	750
Jackets and Leather Apparel	850	2,000	100	650	100	200	800

¹ Categories are based on the most commonly sold items in the ukay-ukay and wagwagan market.

² Average of most prices of related goods (i.e., brand new clothing).

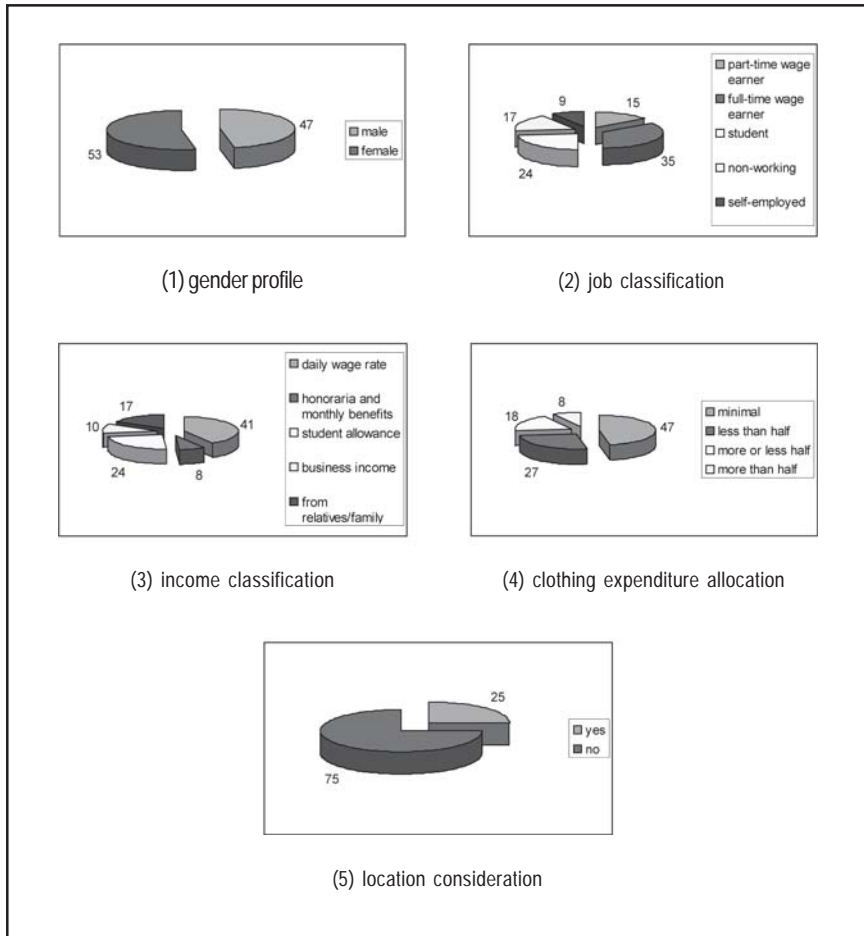
Source: Primary data (survey and interview).

Table 5. Secondhand clothing types and description of each category, Baguio City, 2002

Clothing type	Description
T-Shirts and Polo Shirts	Printed shirts, collared shirts, plain colored-shirts, miniskirts, female polo shirts and skirts.
Pants	Both casual pants (denim pants), khaki pants.
Short Pants	All types of short pants both for males and females.
Formal Dress	Formal dresses for women that include skirts, long blouses.
Formal Attire	The conventional neck-and-tie formal attire for men.
Children's Clothing	All clothing for children from one to seven or eight years of age.
Intimate Wears	Includes underwear apparel for men and for women.
Sports Attire	Includes swimwear (swimsuit for women and swimming trunks for men, swimming shoes, and swim caps), jogging pants and sweat pants, cycling shorts.
Men's Footwear	Generally covers leather shoes, rubber shoes, sneakers.
Ladies' Footwear	All footwear for women inclusive of formal, casual, sandals, and other related footwear for women.
Jackets and Leather Apparel	Sweaters, blazers, trench coats and conventionally designed coats, raincoats, leather jackets (plain and designed).

Source: Primary data (survey and interview).

Figure 1. Frequency distributions of sample per category



Variables come in both discrete and continuous quantifiable variables, as well as categorical qualitative variables, which were given dummy values suitable for regression. Table 6 summarizes the mean, standard deviation, minimum and maximum values (all in PhP) of the data for the quantifiable variables in the regression analysis.

In the second part of the survey, respondents were asked about what they would do given certain situations that could affect the prices of ukay-ukay and wagwagan as well as the prices of the brand new clothing, and their income.

The first case dealt with the situation where the prices of both ukay-ukay and the brand new clothing were set at equal prices. The second case dealt with

Table 6. Descriptive statistics for quantitative variables in survey

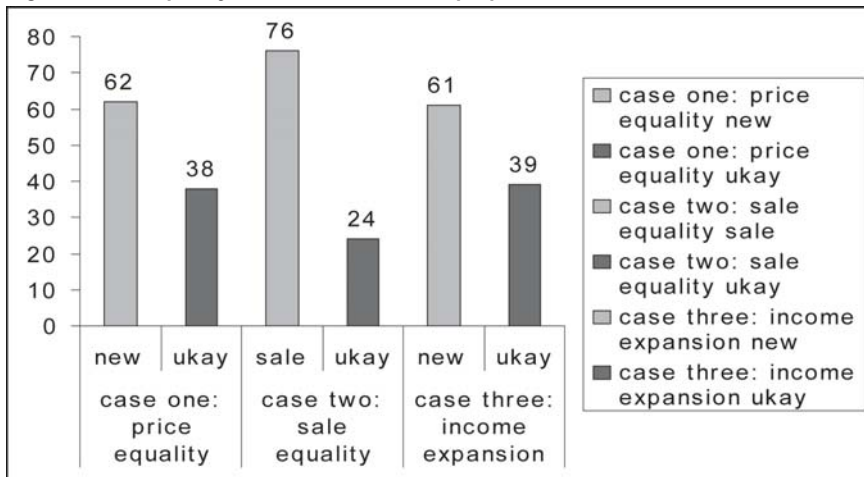
Variable	Mean (PhP)	SD (PhP)	Minimum (PhP)	Maximum (PhP)
Income	7,002.50	5,285.84	1,000.00	20,000.00
Prices (ukay-ukay)	177.45	161.86	0.00	800.00
Prices (new clothing)	402.00	320.32	0.00	1,800.00
Mean monthly expenditure (ukay-ukay)	720.30	593.28	0.00	3,000.00
Mean monthly expenditure (new)	937.80	794.57	0.00	3,500.00

the situation where brand new clothing prices were set at the level of ukay-ukay and wagwagan items (usually during mall promotional sale events). The third and last case dealt with the scenario where the individual happened to have additional income for clothing consumption. In this case, respondents were asked where they would allocate such additional clothing expenditure: on the brand new clothing or the ukay-ukay and wagwagan items. Figure 2 summarizes the results.

Respondents are also asked about their clothing preferences (whether they would buy clothes in ukay-ukay centers or in malls and boutique shops). There are 10 general attributes mentioned in the survey, namely:

- ◆ *quality condition* - whether the clothes are free from defects and errors
- ◆ *brand of clothing*
- ◆ *design and style of clothes* - in reference to the brand new clothes

Figure 2. Frequency distributions of the sample per case



- ◆ *colors and color combinations*
- ◆ *clothing material* - the fabric attribute or what kind of material the clothes are made of
- ◆ *the market price of clothing*
- ◆ *if the clothing fits the trend*
- ◆ *marketing presentation* - how the product or the clothes are packaged as well as the arrangement of these goods in the shops or stalls
- ◆ *ambiance of location*
- ◆ *location background* - if the store is recommended or was discovered through other individuals

Aside from these attributes, the respondents were asked if there were other clothing characteristics they deemed to be important. The survey reflected that there was only one dominant attribute not mentioned: The durability of the clothes (comparison between ukay-ukay and the brand new ones). The summarized data are shown in Figure 3.

The respondents were also asked about their stand on the government’s move to ban the importation, sale, and retail of secondhand clothing. Moreover, they were asked about the government’s initiative, the Buy Filipino Movement (spearheaded by the DTI), which aims to help increase consumption of locally made goods. Figure 4 indicates the results of the survey.

Figure 3. Frequency of clothing attributes for both ukay-ukay and brand new clothing

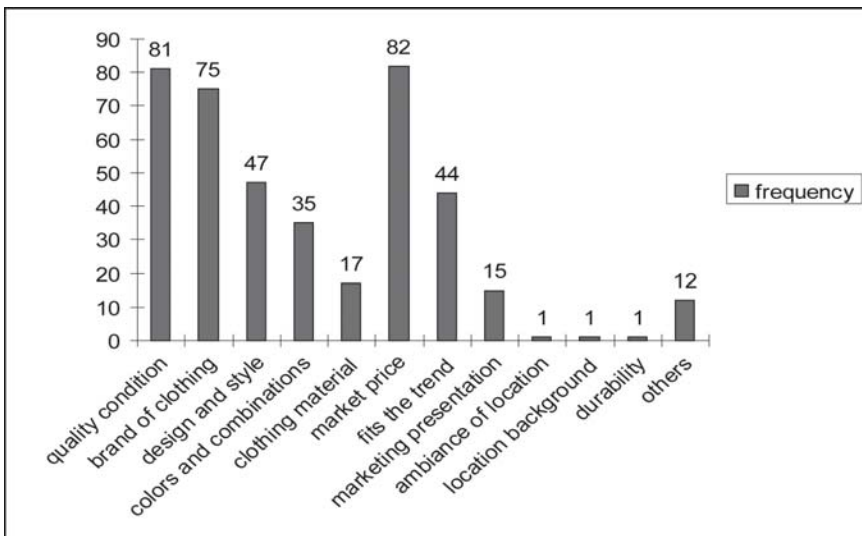
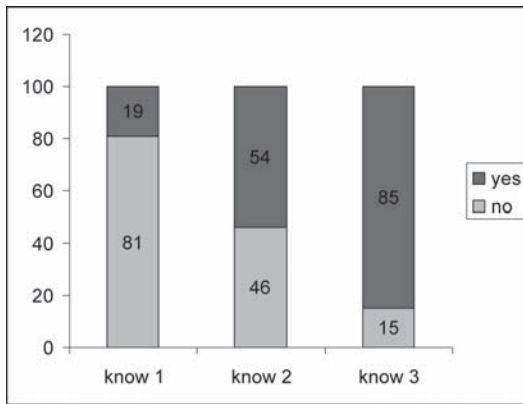


Figure 4. Frequency on the knowledge of consumers about the nature of ukay-ukay



know 1: If the respondent is aware of the banning of ukay-ukay and wagwagan.

know 2: If the respondent knows about the Buy Filipino Movement.

know 3: If the respondent agrees to ban the sale and retail of ukay-ukay and wagwagan.

In general, respondents know the issue surrounding the ukay-ukay market; they are not fully aware about the government's Buy Filipino Movement. Nevertheless, some respondents who reported a zero expenditure rate within an average of one month are fully aware of the economic implications of the importation, sale, and retail of ukay-ukay and wagwagan, and the need to strengthen the information dissemination campaign behind the Buy Filipino Movement.

EVALUATION OF THE REGRESSION MODELS

The linear model of market demand

This was made to determine the effects of the different determinants of market demand for secondhand clothing, such as the respondents' income, the prices of ukay-ukay and brand new clothing, the gender of the respondent, and the location consideration of the respondent (if he or she is willing to go to known places of trade and retail of secondhand clothing).

The summary descriptive statistics of the linear regression are shown in Figure 5. These tables were generated by the SPSS program version 10, the study's main software package. The quantity regressed as the dependent variable was derived by dividing the respondents' actual expenditure for ukay-ukay by their respective prices for the said commodity. The same procedure was done in deriving the quantity for brand new clothing.

Based on the output, the adjusted R-squared for the linear regression is 0.336, which means that only 33.6 percent of the variation in market demand for ukay-ukay is influenced by the independent variables.

The generated F-value of the model is 8.675, which has a significance value of 0.000. The null hypothesis (i.e., the model is not significant) is rejected in favor

Figure 5. Output for the linear regression model of the demand for ukay-ukay

Model Summary						
Model		R	R Square	Adjusted R Square	Std. Error of the Estimate	
1		.616 ^a	.379	.336	3.8693	

a. Predictors: (Constant), location consideration, willingness to pay: new clothing, gender, willingness to pay: ukay-ukay, income

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	649.392	5	129.878	8.675	.000 ^a
	Residual	1062.966	71	14.971		
	Total	1712.358	76			

a. Predictors: (Constant), location consideration, willingness to pay: new clothing, gender, willingness to pay: ukay-ukay, income
b. Dependent Variable: QTY_UKAY

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.475	1.775		3.084	.003
	income	3.24E-04	.000	.363	3.400	.001
	gender	-.752	.910	-.080	-.827	.411
	willingness to pay: ukay-ukay	-1.7E-02	.003	-.611	-5.873	.000
	willingness to pay: new clothing	3.97E-03	.002	.238	2.265	.027
	location consideration	2.028	1.019	.192	1.990	.050

a. Dependent Variable: QTY_UKAY

of the alternative hypothesis (i.e., the model is significant) because the significance value is less than or equal to the level of significance of 5 percent (or 0.05).

Based on the t-tests for each of the coefficients and the constant in the regression model, the output generated shows that only the gender variable is insignificant in determining the respondents' market demand for ukay-ukay. This means that there is no significant difference between the males and the females in their consumption pattern for secondhand clothing.

Finally, because the coefficients of some variables are very small compared to the expected value of the dependent value, such small changes do not have economic sense to warrant some interpretation in this paper.

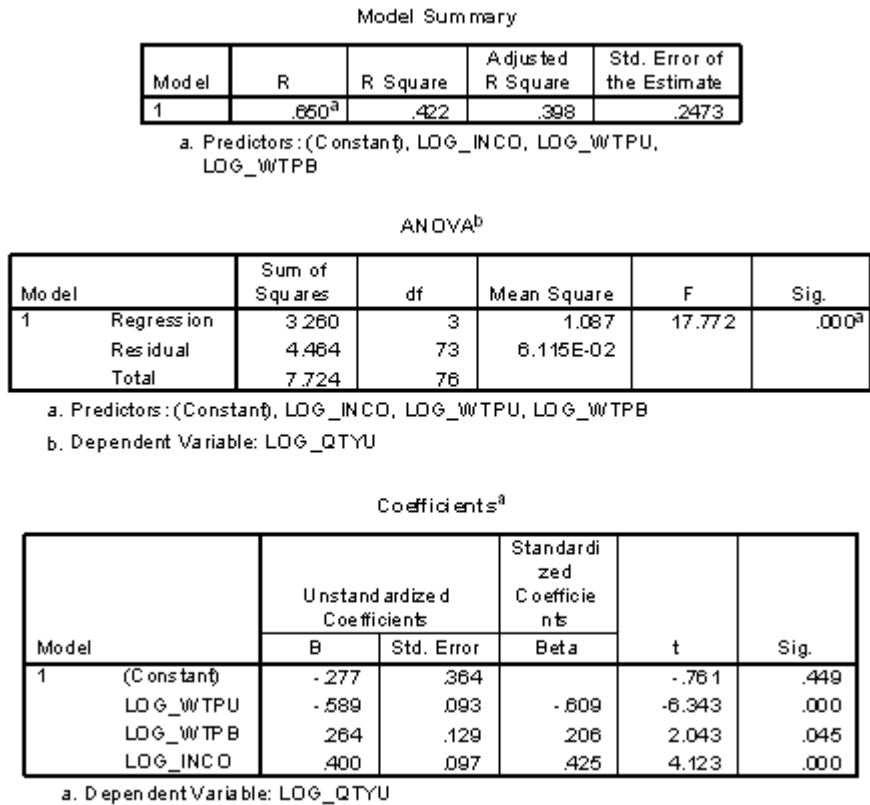
The logarithmic model of market demand elasticities

To determine the elasticity rates of the variables, the income and prices for both ukay-ukay and wagwagan as well as the derived demand quantities were

transformed into logarithmic values and then re-ran using the same method for linear regression. The generated output tables are summarized in Figure 6.⁴

Based on the output generated, the adjusted R-squared for the model, which is 0.398, is relatively higher compared to the R-squared in the linear regression model.⁵ Given the three variables, their contribution to the variability in the market demand for ukay-ukay is 39.8 percent.

Figure 6. Output for the logarithmic regression model of the demand for ukay-ukay



⁴ The author has chosen this method of deriving the elasticities of the variables in consideration for analysis. Nevertheless, the (partial) elasticities of the variables can be computed using the estimated linear model by

$$\epsilon_{yx} = \frac{\partial y}{\partial x} \frac{x_i}{y} = \frac{\partial y}{\partial x} \frac{\mu_{x_i}}{\mu_y} = \beta_i \frac{\mu_{x_i}}{\mu_y}, \forall x_i, 1 \leq i \leq 5$$

⁵ Also note that the R-squared for the logarithmic model is higher compared to the R-squared in the linear model. Although strictly speaking, R-squared among estimated models are comparable if they have exactly the same set of variables. In this case, the same set of data is used but has different combination of variables for the two models.

In terms of the significance of the model, the same significance value is generated and thus the same conclusion can be arrived at (using the same decision rule). However, the F-value for the logarithmic regression, which is 17.772, is also relatively higher compared to the F-value generated in the linear regression model.

The analysis of the coefficients will show that ukay-ukay is a normal good (a positive sign in the coefficient of income), a complement for brand new clothing (a positive sign in the coefficient of prices for brand new clothing), and the demand curve is generally inelastic (a negative sign in the coefficient of prices for ukay-ukay).⁶

Evaluation of the regression models

The two regression models were evaluated with the tests of multicollinearity, autocorrelation, and heteroskedasticity. Using the general rough tests (Gujarati 1995; Maddala 2001), the respondents' data show no signs of these regression problems in economic data. However, specification bias may be a problem since the demand function is dependent on the income of the individuals, number of consumers, prices of related goods, as well as tastes and preferences. There may be other variables that could significantly help explain the changes in the quantity demanded of ukay-ukay and wagwagan items but not captured by the regression model.

Comparing the linear regression versus the logarithmic regression, it may be said that the logarithmic model is better than the linear model due to the following:

- ◆ A comparison of the t-tests for each variable in the two regression models shows that the probability significance values of the logarithmic model (with respect to the variable) is relatively lower compared to that of the linear model;
- ◆ The adjusted R-squared for the logarithmic regression model is higher compared to the linear regression model; and
- ◆ The coefficients of the linear regression model are not economically logical to interpret, given that the dependent variable is the quantity demanded for ukay-ukay, and the coefficients are relatively too small in magnitude to change quantities demanded per unit change in the exogenous variables.

⁶ Note that the general notion or impression is that ukay-ukay is an inferior good (with respect to income), an elastic good (with respect to its own price), and a substitute good (with respect to brand new clothing).

CONSUMER SURPLUS (CS) ANALYSIS⁷

From the regression model (linear model of market demand) and the descriptive statistics of the sample, the equilibrium level of quantity of ukay-ukay demanded can be determined:

Regression Model:

$$d(x) = 5.475 + 0.000324 (\text{income}) - 0.017 (\text{prices, ukay-ukay}) + 0.00397 (\text{prices, new clothing}) + 2.028 (\text{location consideration}) + 1.775$$

Descriptive Statistics:

$$\mu_{\text{prices ukay}} = \text{PhP } 177.45 \quad \mu_{\text{prices new}} = \text{PhP}402.00 \quad \mu_{\text{income}} = \text{PhP}7,002.50$$

Solving for the equilibrium quantity demanded will yield $d(x^*) = 13.14275 \cong 13$.

The equilibrium quantity value assumes that the descriptive statistics are the true values for the market for the respective independent variables. Moreover, the location consideration assumes that individuals are willing to travel to the known places of trade for secondhand clothing.

If quantity demanded is set to zero, then the maximum value of ukay-ukay price can be derived.

$$0 = 5.475 + 0.000324 (\text{income}) - 0.017 (\text{prices, ukay-ukay}) + 0.00397 (\text{prices, new clothing}) + 2.028 (\text{location consideration}) + 1.775 (\text{equilibrium prices, ukay-ukay}) = \mathbf{773.102941 \cong \text{PhP}773.10}$$

The said computed value would be the intercept for the establishment of the pseudo-demand⁸ function of the market for ukay-ukay. One can derive the linear functional form using the other computed values:

$$f(x) = 773.10 - 45.82x \tag{6}$$

The consumer surplus can be estimated using equation 3, and at the computed value $x^* = 13$, $p(x) = 177.45$, and $f(x) = 773.10 - 45.82x$,

$$\text{Total CS} = \int_0^{13} \int_{177.45}^{773.10 - 45.82x} dy dx \tag{7}$$

$$\text{Total CS} = \mathbf{\text{PhP } 3,871.66}$$

⁷ Although the preceding section favors the logarithmic over the linear regression model, the next section still uses the linear regression model because the hypothesized demand curve for this study (and for the purposes of the consumer surplus analysis) is assumed to be linear. This paper does not cover consumer surplus analysis for nonlinear demand curves.

⁸ The term "pseudo" means that the demand function is only derived using the estimates from the linear regression model.

At the given average prices of ukay-ukay and wagwagan, consumers receive the corresponding surplus amounting to PhP3,871.66 for the 13 quantities purchased. However, if the prices of secondhand clothing are raised up to the level of the prices of new clothing (i.e., to PhP402), one can solve for the new quantity level (denoted by x') as thus:

$$\begin{aligned} d(x') &= 5.475 + 0.000324(7002.5) - 0.017(402.00) + 0.00397(402.00) \\ &\quad + 2.028(1) + 1.775 \\ &= 5.475 + (-5.23806) + 2.028 + 1.775 \\ &= 0.23694 + 2.028 + 1.775 \\ d(x') &= \mathbf{4.03994} \cong \mathbf{4} \end{aligned}$$

Equalizing the mean prices of ukay-ukay and wagwagan with the brand new clothing almost cancelled out the autonomous quantity demanded and the combined effect of the prices of ukay-ukay and of new clothing. The new consumer surplus (denoted by CS') is given by

$$\text{Total } CS' = \int_0^4 \int_{402.00}^{773.10-45.82x} dy dx \quad (8)$$

$$\text{Total } CS' = \mathbf{PhP 1,117.84}$$

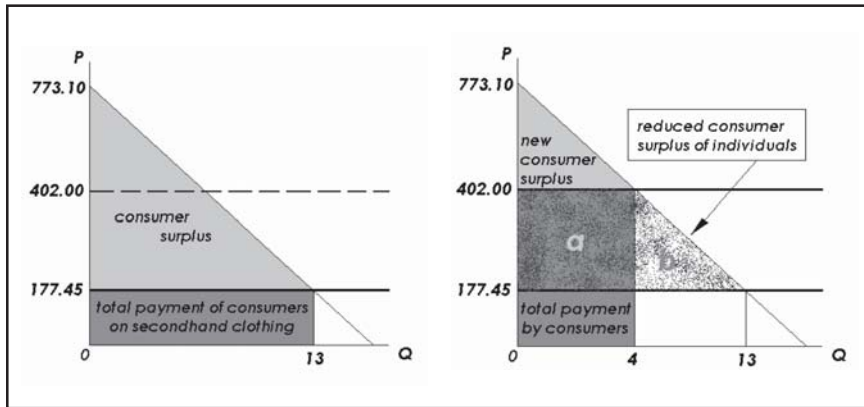
At the raised average prices of ukay-ukay and wagwagan, consumers receive the corresponding surplus amounting to PhP1,117.84 for the four quantities purchased. Graphically, the change in total consumer surplus is shown in Figure 7.

The change in consumer surplus is broken down into two parts. The rectangle comprising the change in surplus (depicted by area "a" in the right panel of Figure 7) shows the reduced consumer surplus due to increase in prices. The triangular area (depicted by area "b" in the right panel of Figure 7) on the other hand, is due to the loss in consumption brought by increased prices. The loss in consumption is based on the demand curve, where, at higher prices, consumers would purchase less of the secondhand clothing (Varian 1999).

The "phenomenon" (i.e., the change in prices) that led to lower consumer surplus and that almost canceled out the exogenous demand and combined effect of the equalized prices (in the previous computations) can be supported by the descriptive statistics shown in Figure 1. Here, an equalized level of prices for ukay-ukay and wagwagan and the brand new counterparts, or increased income for clothing expenditure, would tend to divert consumption from secondhand clothing to the brand new ones).

Figure 7. The pseudo-demand function derived from the linear regression model, and the change in consumer surplus when prices of secondhand clothing are raised up to the level of the brand new counterparts

Graphs are not drawn to scale.



The method of integration was used primarily to present the most general way of calculating consumer surplus under any form of demand function besides the conventional linear form (Varian 1999). The consumer surplus in this case can be easily computed by simple geometric triangle formulas; nevertheless, the geometric interpretation of the integration method is the area bounded by nonlinear functions defined on a closed and bounded interval. In the case of consumer surplus, the integration is used to approximate the area under the demand curve and above the price level, between zero consumption and the equilibrium quantity demanded.

However, the graphical presentation is only a simplified version of the true market demand function. Omitted variables in the regression model (expansion of the location attribute from being a dummy variable, knowledge measurements in relation to the market for ukay-ukay, and the socio-politico-institutional issues, as well as the general clothing attributes) could have contributed to a more accurate and precise model building of the market demand. Due to financial constraints, the incomplete information disclosed by respondents and interviewees, and perhaps the time during the data gathering in Baguio City, the model (with the intended variables) was limited to what was used in consumer surplus estimation as well as in the determination of both the linear and logarithmic regression models of the market demand for secondhand clothing.

Based on the fact that the change in prices decreases consumer surplus by 71.13 percent, one can test if prices of secondhand clothing are priced to a maximum 25 percent (on the average) of the "actual" clothing prices (i.e., prices of brand new counterparts). The said percentage is claimed by reports from both

mainstream newspaper articles (*Philippine Daily Inquirer* and *Philippine Star*), and also by investigative television and radio reports ("Magandang Gabi Bayan"). The following hypotheses are stated for this test:

- H_0 : The general price level of ukay-ukay and wagwagan is more than 25 percent of the prices of the brand new counterparts.
- H_a : The general price level of ukay-ukay and wagwagan is at most 25 percent of the prices of the brand new counterparts.

The test of Z-test approximation can be used to determine if this claim is true. Figure 8 shows the generated output from SPSS software. At the 5 percent level of significance, it can be concluded that the claims of recent reports from radio, television investigative reports, and mainstream newspapers are true.

Figure 8. Output for the Z-test approximation of proportion

Binomial Test						
	Category	N	Observed Prop.	Test Prop.	Asymp. Sig. (1-tailed)	
GROUP	Group 1	1	1118	.22	.25	.000 ^a
	Group 2	0	3872	.78		
	Total		4990	1.00		

a. Alternative hypothesis states that the proportion of cases in the first group < .25.

b. Based on Z Approximation.

Implications of the CS analysis

As a crude measure of welfare (on the demand side of the analysis), the decrease in consumer surplus for the hypothetical scenario in the right panel of Figure 7 (which is computed to be 71.13%) may be an indicator that the mere presence of the secondhand market for these goods is beneficial to consumers. Such big decrease may be linked to the discontent of the respondents when the scenario was presented to them (e.g., the increase in price may be due to tax imposition of the government to these goods, treating them as "regular" goods or as if they are also brand new clothes), as explained in the next section of this paper.

Moreover, on the part of the retailers, there is also a reduction in their revenue on the average—from PhP2,306.85 to PhP1,608.00. Such decrease amounts to 30.29 percent on the average. Table 7 summarizes the implications of the hypothetical scenario in Figure 7.

Table 7. Summary values of two panels in Figure 7

Scenario	Price (PhP)	Quantity demanded	Consumer surplus (PhP)	Total revenue (PhP)
At equilibrium (left panel)	177.45	13	3,871.66	2,306.85
At raised prices (right panel)	402.00	4	1,117.84	1,608.00

POLICY INTERVIEWS AND INSIGHTS: ANOTHER SIDE OF THE STORY

Secondhand clothing and garments retail and trade have become a part of the domestic market over the past century. The government's main objective to protect local markets and industries has been set into law when Republic Act 4653 banned the importation, sale, and retail of ukay-ukay goods. However, public policy implementation has become a persistent problem of the government. There have been no further recorded government actions since the enactment of this Act. With the transformation of secondhand clothing and garments retail and trade into what it is today, the government is now moving to control and vindicate the market activities of ukay-ukay.

The first and foremost point to note is the controversial manner these secondhand clothing and garments goods were entered into the local market. There are three government claims regarding the entry of these goods (that became the grounds for the strict implementation of the ban of ukay-ukay): (1) These are originally relief goods from other countries that were donated through both locally based or international charitable institutions; (2) These are imported with some "red tape" in the Bureau of Customs (de Castro 2001) to make them appear as *pasalubong*; and (3) These are possibly smuggled (imported without taxes and government inspection).

In response to such claims, individuals or groups such as the Baguio Alternative Fashions headed by Beverly Somera (Cabreza 2001) claim that they legally import these goods, bear the import costs, and pay the corresponding taxes imposed on such imports. On the other hand, one of the retailers interviewed for the study did say that they have been cooperating with a nongovernmental organization (NGO) to process the papers for the entry of ukay-ukay. These goods will enter the country as donations under the name of this NGO. However, what happens next after the goods arrive are internally arranged between the NGO and the retailer.

Residents of Baguio City claim that the supply of secondhand clothing comes from local individuals. These individuals trade their own clothing to ukay-ukay and *wagwagan* retailers. Moreover, some overseas Filipino workers (OFWs) would engage in purchasing secondhand clothing and sending it locally as their own *pasalubong* to their respective families.

In 1999, during the boom of the market for ukay-ukay and wagwagan in Baguio City, the tourism board of the city government through Mayor Bernardo Vergara proposed that ukay-ukay and wagwagan be promoted as the city's new tourist attraction. It was planned to be endorsed by President Gloria Macapagal-Arroyo. Yet, during her term as DSWD secretary under former President Joseph Ejercito Estrada, an administrative order banned the sale and retail of these secondhand goods. Later, under DSWD Secretary Corazon Soliman, the same administrative order that banned ukay-ukay and wagwagan was reinstated.

Although the government did not support the promotion of secondhand clothing in Baguio City, ukay-ukay and wagwagan shops continued to flourish in the city. Until today, the issue of whether to fully legalize or ban ukay-ukay and wagwagan remains a debate in the city council as well as among the legislative representatives from respective districts.

From the government's point of view, the sale and retail of these secondhand clothing and garments are detrimental to the growth and development of the national economy. Such has greatly affected local producers and firms involved in manufacturing, particularly the textiles, garments and clothing subsector that contributes to the country's gross domestic product and gross national product.

Local consumers have been claiming that the emergence of these stores in Baguio City (as well as in urban centers and nearby provinces across the country) are the signs of the times (Cabreza 2001). The continued consumer demand for ukay-ukay and wagwagan may be attributed to the fact that not even 25 percent of the actual price of brand new clothing and garments can match the low prices of secondhand clothing. With increasing prices, people would tend to cut expenditures on clothing (on the assumption that their incomes cannot cope with inflationary effects). However, among the ukay-ukay retailers, colonial mentality persists: They impose higher prices for branded secondhand commodities, but put the price ceiling at 75 percent of the actual price of brand new counterpart clothing.

On the other hand, there are other new alternatives to the ukay-ukay and wagwagan. In Baguio City, some shops include export overruns (i.e., not secondhand items). This is one of the trademarks of the retail stores, Baratilyo sa Harrison and Eastpark Best Selected Items.

Interviews with retailers and consumers of ukay-ukay and wagwagan goods uncover certain possible solutions to the problem that beset the national government and the city council of Baguio. In general, the interviewees disagree with the national government's plan to confiscate and burn the goods. Rather, foreseeing a continued increase in the number of secondhand clothing and garments sellers, the interviewees favor a control in the number of ukay-ukay shops and stalls, both

in Baguio City and the whole country. Some even suggest that Baguio City remain as the "ukay-ukay capital" while limiting other parts of the country from setting up ukay-ukay and wagwagan stalls.

Since ukay-ukay and wagwagan clothing are donated goods, these are not slapped any taxes upon entry into the country, thereby allowing them to enjoy relatively lower prices than their counterpart commodities. Thus, several retailers interviewed suggest that the government must also do to secondhand clothing what it is now doing to surplus electronics (computers), automotive spare parts, and secondhand appliances (such as television sets and radio transceivers). This way, ukay-ukay and wagwagan prices would rise and thus lessen the price gap with brand new goods.⁹

On the other hand, other survey respondents—those who do not patronize ukay-ukay and wagwagan goods—suggest that the government must strictly implement the laws ratified years ago, with no exceptions. To mitigate the adverse effect of such as a proposal on the existing stalls—businesses that have employees relying on this industry for their income—a contingent program would have to be in place.

⁹Note that in the event prices for ukay-ukay increase, data present some evidence of a decrease in consumer surplus and total revenue for the retailers, as presented in the earlier sections of the paper (not considering any specific reason for the supposed increases in prices).

APPENDIX

Republic Act number 4653¹⁰

AN ACT TO SAFEGUARD THE HEALTH OF THE PEOPLE AND MAINTAIN THE DIGNITY OF THE NATION BY DECLARING IT A NATIONAL POLICY TO PROHIBIT THE COMMERCIAL IMPORTATION OF TEXTILE ARTICLES COMMONLY KNOWN AS USED CLOTHING AND RAGS.

Be it enacted by the Senate and House of Representatives of the Philippines in Congress assembled:

Sec. 1. It shall be unlawful for any person, association, or corporation to introduce into any point in the Philippines textile articles commonly known as used clothing and rags, except when these are imported under Subsections "i", "j", "k", "l", "n", and "v" of Section 105 of Republic Act Numbered Nineteen hundred and thirty-seven.

Sec. 2. The penalty of fine of not less than two hundred pesos nor more than twenty thousand pesos and imprisonment of not less than two years nor more than five years, shall be imposed upon persons found guilty of violation of the provision of this Act: *Provided*, That in the case of aliens, the penalty to be imposed shall consist of the payment of the fine hereinabove provided for and that of immediate deportation without any further proceedings on the part of any Deportation Board: *Provided, further*, That if the violation is committed by the manager, representative, director, agent, or employee of any natural or juridical person in the interest of the latter, such violation shall render the employer liable to the penalty corresponding to the offense, without prejudice to the imposition of the corresponding penalty, either personal or pecuniary or both, upon the manager, representative, director, agent, or employee, committing the violations: *Provided, furthermore*, That in the case of the violation committed by or in the interest of a foreign juridical person duly licensed to engage in business in the Philippines, the person or persons directly or indirectly involved in the importation shall suffer the penalties herein provided for and the revocation of such license and perpetual disqualification to engage in business in the Philippines shall form part of the penalty imposed: *Provided, also*, That if the act committed by a public officer or employee is penalized by any other law, the penalties prescribed in the law punishing the offense shall be imposed in addition to those prescribed herein and that of perpetual absolute disqualification: *Provided, finally*, That used clothing and rags imported in violation of this Act shall be burned in the presence of a representative of the General Auditing Office, Department of Finance and the Office of the President, without the forfeiture proceedings provided in Republic Act Numbered Nineteen hundred and thirty-seven.

Sec. 3. All Acts, rules and regulations inconsistent with this Act are hereby repealed.

Sec. 4. This Act shall take effect upon its approval.

¹⁰ Approved on June 17, 1966 by the Fifth Congress of the Republic of the Philippines during its Fourth Session. Philippines (Republic) Official Gazette, Vol. 64 No. 44, pp. 11200-11201.

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