WEIGHTS AND MEASURES IN EAST ASIAN STUDIES

An important topic in East Asian Studies is the way things have been measured throughout history. Although this is a highly technical subject, some familiarity with it is necessary if you are to understand how people keep track of things. As with many of the handouts for this course, the comments contained here are designed to introduce the basics and only suggest some of the deeper complexities that may be necessary for any reading or research you do in East Asian Studies. Fuller discussions can be found in Wilkinson, *Chinese History: A Manual*, pp. 220-253 and Herschel Webb, *Research in Japanese Sources*, pp. 32-40.[1]

Some preliminary points deserve emphasis. First, the traditional measures used in East Asia prior to the twentieth century underwent a general evolution. In other words, it is not a safe assumption that a measure used in one period was precisely the same as the same measure used in another period. Length and weight measures were particularly subject to slight variation over time. Second, all three of the main East Asian countries had a complex relationship between the national and local levels of their societies. As a result, there are often differences between the uses of a measure between different regions. Third, even now (when all three countries have adopted the internationally standard metric system for official measurements) traditional measures remain in use. Thus, we are not simply dealing with an esoteric subject. It will behoove you to become familiar with traditional measures and get used to doing rough conversions quickly (in your head). Of course, as Americans, many of you will likely have to do two sets of conversions: one to the metric system, which is official, and the other to the English system (i.e., pounds, ounces, miles, etc.).

In what follows, I have tried to give rough equivalents for the most important traditional units. Many of these units have since been standardized according to the metric system. When I thought it useful, I also gave you these (though remember that the metric system was not adopted until relatively recently in East Asia). One last point to keep in mind is that sometimes the same term is used in two different ways. In other words, the same unit can be either a measure of length or of area (i.e., the square of a length). You therefore must pay attention to the context to interpret the measure correctly.

Numbers

Let us begin with a subject that is already familiar as a result of your study of East Asian languages: numbers. As you already know, the counting system used in East Asian languages divides numbers differently from European custom. Whereas European languages have two clear divisions for the most common numbers (thousands and millions), East Asian languages take ten thousand (10,000) as the middle division. The next division comes at the one-hundred million (100,000,000 or 億) level, then the trillion (1,000,000,000,000 or 兆) level. Westerners usually require much practice to acquire skill

[1] Note that sections of this chapter are reprinted as part of the entry on Weights and Measures in the *Kodansha Encyclopedia of Japan*. It includes, however, a useful table of the standardization of traditional measures in Japan in 1891.

in using this system, but it should be attempted. You may wonder when you would ever need to know 億 or 兆 ; the answer is as close as the nearest newspaper article on the national economy. Not surprisingly, East Asians use 10,000 萬 or 万 (Ch: *wàn*; J: *man*; K: *man*) as a general statement to mean "very many." This is similar to the English usage of "thousands."

The other aspect of East Asian numeration is the use in East Asian languages of "measure words" when referring to the number of objects. English only does this in idiomatic cases when referring to specific categories. In the English phrase "three head of cattle," the word "head" is the measure word. This is not strictly the same as the use of measure units discussed below, but when you read materials in Chinese, Japanese, or Korean, you will often run into situations in which the measure units appear in the place of the more usual grammatical "measure words."

Length and Area

Chinese

The following are the traditional units of length measurement in China. Note that the translations are only approximations:

寸 *cùn*: often translated as "inch."
尺 *chǐ*: "foot" = 10 寸 = approximately 1/3 of a meter.
丈 *zhàng*: = 10 尺
里 *lǐ*: "Chinese mile" = approximately 1/3 of an English mile.

It is very common to give long distances in *li*. Remember to give an English equivalent, you need to divide the number of *li* by 3.

Note that there are modern terms to specify metric or English units. For length, Chinese adds either "common" (*gōng* 公) for metric or "English" (*yīng* 英) for English units:

公分 *gōngfēn* = centimeter
公尺 *gōngchǐ* = meter (also transliterated as 米 *mǐ*)
公里 *gōnglǐ* = kilometer

英寸 *yīngcùn* = inch
英尺 *yīngchǐ* = foot
英里 *yīnglǐ* = mile

One other length measure with great historical significance was that used for lengths of cloth:

匹 or 疋 *pǐ*: bolt = 4 丈 (a bit over 13 meters).

Early in Chinese history, most households had a responsibility to pay part of their taxes in cloth (usually silk). The "bolt" was the usual measure. Because of the value of silk, early price data is also often given in bolts of silk.

As in English, there are measures of area as well. Again, the translations are only suggestive:

畝 *mǔ*: "Chinese acre" = approximately 1/6 of an acre (or about 733 square yards)
顷 *qǐng*: = 100 畝

Japanese[2]

As noted above, Japanese measures were standardized in 1891. Nevertheless, the modern hierarchy follows the traditional one. Notice that many of the terms are derived from Chinese measures (though with significant variations). The most important length units are as follows:

1 *shaku* 尺 = 30.3 centimeters = 10 *sun* 寸 = 100 *bu* 分

1 *chō* 町 = 109 meters = 60 *ken* 間 = 360 *shaku*

Note that the *ken* is particularly famous as the standard unit of measure for architectural purposes because it represents the distance between support poles in traditional homes or the length of a tatami mat (about 1.8 meters or a fraction under 6 feet).

1 *ri* 里 (approximately 4 kilometers or 2.6 miles) = 36 *chō*

The most common area measure for land is the *tan* 反 or 段:

1 *tan* = 992 square meters = 10 *se* 畝 = 300 *tsubo* 坪[3]

There is a larger unit that is also quite common:

1 *chō* 町 = 10 *tan* = 9917 square meters

If you are ever looking for an apartment in Japan, probably the most useful unit of measure you should know is the *–jō* 畳, the area of a tatami mat. Apartment rooms are always described in terms of how many *jō* they are, even if there are no tatami in sight.

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[2] Note that the most accessible table of Japanese measures (without any historical explanation) appears in Andrew Nathaniel Nelson, *The Modern Reader's Japanese-English Character Dictionary* (2nd Rev. ed., Rutland, VT: Charles E. Tuttle, 1974), pp.1029-30 (Appendix 11).
[3] Note to those of you studying in Taiwan: the Taiwanese often use the *tsubo* as a unit in real estate.

The modern (and official) metric system is commonly handled with transliterations of the international units using the *katakana* syllabary (although there are official *kanji* equivalents[4]):

ミリメートル "millimeter"
センチメートル "centimeter"
メートル "meter"
キロメートル "kilometer"

Areas in the metric system are usually designated as "square" (*heihō* 平方) units:

900 平方メートル = 900 square meters.

Korean

It must be noted that the use of the traditional metric system in Korea has been strongly discouraged. The Korean government has conducted various publicity campaigns that included television and radio advertisements, placards, leaflets and a contest to design a slogan and poster to promote the use of the international system of units. This move is aimed at expanding the use of international measurements because the widespread use of traditional units such as "pyeong" and "ja" frequently causes inconvenience and misunderstanding in commercial transactions.

As a result, citizens have become aware of the problems that arise from using standard measuring units; however, a survey of commercial transactions conducted by the ministry revealed that the use of the conventional measuring units persists among merchants, as well as in commercial transactions, manufacturing facilities and farms, while awareness of the punitive measures is low.

The government's will to eradicate the use of the traditional system is very strong. For instance, the Korean government (the Ministry of Commerce) announced that it would impose a fine of up to one million won ($770) on those who violate the ban, in an effort to encourage the of the use metric system.

The following are the traditional units of length measurement in Korea.

P'un 푼 (分)	= 1/10 of 치 (about 0.3 cm or 0.1 inches).
Chi 치 /촌 (寸)	= 10 푼 (1/10 of 자) (about 3 cm or 1 inch).
Cha 자 / 척 (尺)	= 10 치/촌 (1/6 of 간) (about 30.3 cm or 11.8 inches)
Kan 간 (間)	= 6 자/척 (about 70.9 inches).
Li 리 (里)	= (about 393 m or 1/3 of an English mile)

[4] See the list in Nelson, *Japanese-English Character Dictionary* (Appendix 11).

In addition, the modern (and official) metric system used is as follows:

밀리미터 "millimeter"
센티미터 "centimeter"
미터 "meter"
킬로미터 "kilometer"

Modern Metric System (Korea)				U.S. System				Korean traditional System
millimeters (mm)	centimeters (cm)	meters (m)	kilometers (km)	inches (in)	feet (ft)	yards (yd)	miles (mi)	cha (자 / 尺)
1	0.1	-	-	0.039	-	-	-	0.003
10	1	0.01	-	0.391	0.033	0.011	-	0.033
1,000	100	1	0.001	39.371	3.281	1.093	-	3.3
-	-	1,000	1	-	3,280	1,093.4	0.621	3,300.003
25.4	2.54	0.025	-	1	0.083	0.028	-	0.084
3.05	30.48	0.305	-	12	1	0.333	-	1.006
9.14	91.4	0.914	-	36	3	1	-	3.018
-	-	1,609.3	1.609	-	5,280	1,760	1	5,310.695
303.03	30.303	0.303	-	11.82	0.99	0.33	-	1

Meanwhile, in the metric system, area is indicated by 평 (坪): about [3.306m^2]

Modern Metric System (Korea)		U.S. System	Korean traditional System
are (a)	hectare (ha)	acre (ac)	pyeong (평/ 坪)
1	0.01	0.025	30
100	1	2.472	3,000
40.468	0.405	1	1,213.541
0.33	-	-	1

Perhaps, even today, *pyeong* is the most widely used Korean traditional metric system. For instance, you may hear the use of *pyeong* by Koreans, discussing how big your apartment or house is. If you are ever looking for an apartment in Korea, probably the most useful unit of measure you should know is the *pyeong*.

Weight

Chinese

Weight measures are among the most durable in the popular imagination. Despite more than half a century utilizing the metric system, Chinese still employ traditional measures for expressing weights. Note, however, these have changed in modern times to conform to the decimal system.

銖 *zhū*
兩 *lǐang*: a Chinese ounce = 24 銖
斤 *jīn*: a "catty" = 16 兩

In the modern period, 10 兩 = 1 斤. It is useful to develop a general sense of what these mean in concrete terms. For example, it is common nowadays for restaurants to price dumplings by the 斤 and to count 6 dumplings per 兩. That means that if you want to eat 30 dumplings (a very substantial amount), you should order 5 兩 or half a 斤.

The metric measures follow a slightly different pattern than the length units since they mix transliterations with "common" compounds:

克 *kè*: gram
公斤 *gōngjīn*: "common *jīn*" or kilogram

As it turns out, under the modern system, a catty 斤 is defined as 500 grams so there are two catties per kilogram. Since there are 2.2 English pounds per kilogram, this means that a catty is roughly the same as a pound (1.1 pounds actually). When telling someone your weight, make sure that you use the terms carefully. 165 pounds is about 165 *jīn*, but only 75 *gōngjīn*!

Japanese

The same division between standardized traditional units and the use of transliterated metric terms applies to Japanese weights as well:

The basic unit of weight in Japanese is the *momme* 匁:

1 *momme* = 3.75 grams

160 *momme* = 1 *kin* 斤

Note that the *kin* is therefore approximately equal to .6 kilograms or 1.3 pounds (a little more than the Chinese *jīn*).

1000 *momme* = 1 *kan* 貫 or *kamme* 貫目 = 3.75 kilograms = 8.25 pounds.

The most common metric transliterations are:

ミリグラム “milligram”
グラム “gram”
キログラム “kilogram”

Korean

The followings are the traditional units of weight measurements in Korea.

P'un 푼 (分) = 1/10 of 돈 or about 0.0075 oz
Ton 돈 /돈쭝 (寸) = 10 푼(1/10 of 냥) or about 0.075 oz
Nyang 냥 (兩) = 10 돈/돈쭝(1/16 of 근) or about 0.75 oz
Kun 근 (斤) = 16 냥 or about 1.2 lb or 600 g
Kwan 관/쾌 (貫) = about 8.3 lb or 3.75 kg

In addition, the modern system used in Korea is as follows:

그램 “grams”
킬로그램 “kilograms”
톤 “tons”

Modern Metric System (Korea)			U.S. System		Korean traditional System	
grams (g)	kilograms (kg)	tons (t)	ounces (oz)	pounds (lb)	*kun* 근 (斤)	*kwan* 관 (貫)
1	0.001	-	0.035	0.002	0.002	-
1,000	1	0.001	35.274	2.205	1.667	0.267
0.001	1,000	1	-	2204.6	-	266.667
28.349	0.028	-	1	0.625	0.048	0.008
453.59	0.453	-	16	1	0.83	0.121
600	0.6	-	12	1.2	1	0.16
3,750	3.75	0.004	132.278	8.269	6.25	1

Volume

Chinese

Dry measures were, of course, very important for measuring agricultural commodities. The most common units were the following:

升 *shēng* = a Chinese “pint” (about a quart)
斗 *dǒu* (a “peck”) = 10 升

石 *dàn*: a picul = 10 斗. Note that this character is one of the relatively small number of Chinese characters with multiple pronunciations. Its usual meaning is "stone" and is pronounced *shí*. You will often see its "picul" meaning transliterated a *shi* also, though that is not technically correct.

It is also worth noting that the "picul" was the unit for measuring official salaries during early periods of Chinese history since officials were paid in kind (rice). It was therefore also used as a standard in historical sources for price information.

In the modern period, the metric system is the usual way for measuring volume:
毫升 *háoshēng*: milliliter
升 *shēng*: liter

There are Chinese equivalents to the English units of gallon, quart, and pint, but they are so rarely used that it is not necessary at this stage to introduce them.

Japanese

Japanese traditional capacity measures have also been standardized and pegged to the metric system.

shō 升 = 1.8 liters = 10 *gō* 合 = 100 *shaku* 勺

It is possible to give this a general sense. The big, two-liter bottles of soda that Americans buy are a little bit more than 1 *shō*. For those of you who have spent time in laboratories, a *shaku* is about 18 milliliters (ml).

The Japanese still regularly use the *gō* when measuring rice in the kitchen. For example, if you buy a rice cooker in Japan is always comes with a 1 *gō* measuring cup.

For larger amounts:

10 *shō* = 1 *to* 斗

There is one measure unit that is historically very important. This is the *koku* 石. In modern terms, this is

1 *koku* = 10 *to* = 180 liters (approximately 45 gallons).

This was, however, also used as a dry measure for rice yields (see the discussion of picul under Chinese volume above) in traditional times. From the sixteenth century on, it was the unit with which the size of domains of feudal lords (*daimyō* 大名) was measured.

During this period,

1 *koku* = approximately 5 bushels of rice = approximately 160 quarts.

There are some interesting aspects of this usage. Measuring feudal domains by capacity allowed the government to gauge the *productivity* of a domain (not just its size) thus giving it a better sense of its *value*. The size of these domains varied significantly from about 10,000 *koku* up to 1,000,000 *koku*.

The metric transliterations are as follows:

ミリリットル "milliliter"
リットル "liter"

Korean
The most common traditional Korean units, very important for measuring agricultural commodities, are the following.

Hop 홉 = 1/10 of 되 (about 0.32 pints)
Toe 되 /승(升) = 10 홉 (1.8 liters, 3.2 pints)
Mal 말 /두(斗) = 10 되 (3.96 gallons)
Som 섬 / 석(石) = 10 말/되 (about 39.6 gallons)

Metric System	U.S. System		Korean traditional System	
liters (l)	pints (pt)	gallons (gal)	*Toe*(되)	*Mal* (말)
1	1.759	0.22	0.556	0.056
0.568	1	0.125	0.316	0.032
4.546	8	1	2.526	25.255
1.8	3.168	0.396	1	0.1
18	31.676	3.96	10	1

The following modern metric system is the usual way for measuring volume:

미리리터 "milliliter"
리터 "liter"

Money

Chinese

Traditionally, the Chinese currency system was based on the circulation of precious metals in two forms, coins and bullion. Chinese coins were minted from copper and had a

square hole in the middle. The hole enabled people to keep better track of large numbers by stringing the coins together. The units were therefore:
錢 *qiān*: one coin or "cash"
貫 *guan*: one "string" = 1000 錢. Note, however, that in different periods and different regions the actual customary number of coins on a string could vary considerably.

Bullion was generally measured by weight. After copper, the metal used by Chinese before the modern era was silver:

兩 *liǎng*: a Chinese ounce, usually translated as "tael."
斤 *jīn*: a catty = 16 taels.

Prices listed in historical sources could use any of these measures. Before the monetary system was fully developed other measures such as lengths of silk or piculs of grain could be used to indicate the values of things (see sections above).

The Modern Era (1949 to the present):

Since China is currently divided by two rival states (one governing the mainland and the other the island of Taiwan), there are two separate currency systems in place. Both ultimately derive from reforms made in the early twentieth century. At that time, the currency was formally divided into three decimal denominations. The basic unit was the *yuán* 圓 (literally "round," thus denoting a full unit). This is often written in abbreviated form using the character 元. This was divided into ten *jiǎo* 角. Each *jiǎo* was further divided into 10 *fēn* 分. This yields the following equation:

1 圓 = 10 角 = 100 分

These units are thus roughly analogous to the American dollar, dime, and penny (or cent).

These are the formal units. However, in spoken Chinese, they are usually referred to with more colloquial terms. Instead of 圓, the term used is *kuài* 塊 (simplified as 块), literally meaning "piece." *Máo* 毛 is usually used instead of 角. The term for cent is the same in colloquial usage.

When amounts are written in decimal form they are now often preceded by the symbol associated with the Japanese *yen* ¥.

The following amount ¥ 9.75 is written as 九圓七角五分, but it is spoken as 九塊七毛五分. Note, however, that the final *fen* is often dropped in casual conversation. It is important to know this terminology also because Chinese use these same units when discussing foreign currencies such as the American dollar (known as the *měi yuán* 美元).

The experience of the Second World War and the subsequent Chinese Civil War had a dramatic impact on the Chinese economy, which is reflected in monetary terminology.

The basic problem was massive inflation that destroyed the value of the Chinese currency. After 1949, the two rival governments moved to reform their currencies in order to control inflation.

In the mainland, a new currency was created known as the "people's currency" or *rénmínbì* 人民币. Its value has been carefully controlled by the government of the People's Republic. As a result, the three units discussed above are all used in mainland China. The form seen in banking situations is as follows:

¥8.23 (about US $1 on January 6, 2004)

The government on Taiwan (the refugee Republic of China) also created a new currency, known as the *xīn táibì* 新臺幣 or "New Taiwan Dollar." The value of this unit has appreciated over the years, but it is still so low that there is really no practical need for smaller units (such as the *jiao* or *fen*). The fractional units are, of course, still useful in banking. Prices are generally given as follows:

34 元 (about US $1 on January 6, 2004)

Japanese

The Japanese monetary system operated on similar principles as the Chinese. In other words, the economy depended on a combination of copper coinage and precious metal bullion. There were, however, several added wrinkles. Prior to the sixteenth century (the 1500s), the dominant form of coinage was copper coins imported from China. Although copper coins were minted in Japan as early as the eighth century, the expansion of the economy after the twelfth century depended on the presence of coins produced by China's Song dynasty. Such coins are known as *Sōsen* 宋銭. The usual unit of copper coinage was the *mon* 文 (1 *mon* = 1 cash). These were strung together following Chinese practice. Theoretically 1000 *mon* made up a string (*kan* 貫), but in practice, strings usually had fewer than 1000 coins. During the sixteenth century, both gold (*ōban* 大判) and copper (*tsūhō* 通宝) coins were minted in Japan.

One thing to remember about many aspects of Japanese history is the importance of regional variation in Japan. This was certainly true of monetary history as well. Nevertheless, there are some units that you are more likely to encounter (especially at the undergraduate level). These units are generally given in their Tokugawa period (1603-1868) units.[5] In some regions, gold was predominant; in others it was silver. Beyond this, many of the larger *daimyō* domains actually issued paper currency for use within their borders.

[5] A very good and concise description of the currency situation during the Tokugawa period appears in an appendix to Katsu Kokichi, *Musui's Story: The Autobiography of a Tokugawa Samurai*, trans. Teruko Craig (Tucson: University of Arizona Press, 1988), pp.173-74.

The measures did provide ways to link the coinage and bullion system by means of weight (which amounts to an exchange rate between copper and the precious metal bullion).

Coinage:
1 gold *ōban* (大判) = 1 *ryō* 両 = 10 *koban* 小判
4000 *mon* = 4 *kan* = 1 *ryō*

Silver Bullion:

1 *momme* 匁 = 3.75 grams = 100 *rin* 厘

1 *kan* 貫 = 1000 *momme* = 3.75 kilograms = 8.25 pounds

60 *momme* = 1 *ryō*

Exchange rates:

Note that bimetallic (or, in the case of Japan, trimetallic) monetary systems require exchange rates to convert the different units. Overtime it seems, the value of copper fell. Thus, whereas in theory one needed 4000 *mon* to equal 1 silver *ryō*, by the middle of the nineteenth century, the figure was over 6000.[6]

The standard unit for gold was the *ryō* which, according to Teruko Craig, equaled 18 grams.[7] This yields a theoretical exchange rate of about 225 grams of silver equaled 18 grams of gold.

The Modern Era (post-1868):

The currency system was standardized and new units were added in 1871 as part of the wholesale, national reforms implemented after the Meiji Restoration. These units are more familiar:

1 *ryō* = 1 *yen* 円 (Note that the actual pronunciation of the character in Japanese is *en*)
1 *yen* = 100 *sen* 銭

The devaluation of the yen after World War II (during which the Japanese economy was wrecked) has made the *sen* relatively unimportant. The value of a single yen is so small that there is no practical need for a smaller unit. As a result, there are no *sen* coins in circulation now. Nevertheless, the unit is still sometimes used in banking so you may run across it and should be familiar with it. Also, *sen* is often used in colloquialisms, like we use "one red cent."

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[6] Katsu, *Musui's Story*, pp.173-74.
[7] Katsu, *Musui's Story*, p.173.

Korean

Traditional currency

In the Three Han States period (2nd century-1st century B.C.) iron was an important trade commodity. Other means of exchange included grains, fur and domestic animals.

The Korean monetary system operated on similar principles as the Chinese and Japanese: the economy depended on a combination of copper coinage and precious metal bullion.

The first Korean coin(iron) was minted in the 15th year of King Seongjong's reign (A.D.996) in the Goryeo Kingdom. Next, in the Joseon Kingdom, mulberry paper currency (currency printed on paper made from the bark of mulberry) was issued in the first year of King Taejong (1401) and copper coins called Joseon tongbo were minted in the fifth year of the rule of King Sejong.

It was in the 17th century and after that coins were minted in great quantities and a government agency in charge of minting coins was created. Coins were also minted by regional government offices. The major coin of the period was the Sangpyeong-tongbo.

The traditional units of currency in Korea is very similar to the units of weight. The most basic unit of currency is *p'un* 푼.

P'un 푼 (分) = 1/10 of 돈
Ton 돈 /돈쭝 (寸) = 10 푼
Nyang 냥 (兩) = 100 푼

Modern Korean currency: WON

The South Korean unit of money is the won. At this time (2003) the value of the won is about 1,200 won per U.S. dollar. The thousand won bill at the left would equal about 77cents in U.S money.
The largest South Korean bill is 10,000 won or about $7.70 U.S.
Exchange rate: Won/1 US $
1,296 (2001), 1,264.50 (2000),
1,138.00 (1999), 1,207.80 (1998),
1,415.00 (1997), 844.20 (1996)

At left: 5,000 won bill.

At left: 10,000 won bill.

When you go to the bank to get money you don't sign your name. You use a personal seal that has been made for you. This is your signature. Most of the seals are made from wood, but some are carved from stone like the three at the left.

From (http://www.gleejoseph.com/KoreaCurrency.htm)

People

Chinese

When counting individuals, there are two measures methods employed in historical sources. The term 人 (*rén*) is often used when enumerating individuals in general ways (the number of people arrested, killed in a battle, receiving an award, etc.). In more technical documents (such as population statistics), the term 口 (*kǒu*) "mouth" is often used. For example, a district might have a population of 100,000 "mouths."

Population statistics in historical times, however, were often more concerned with keeping track of a more important legal entity, the "household" (戶 *hù*). This is a somewhat slippery concept. It denotes the group of people living within one residence. Usually this included a father and mother, their sons, their sons' children, and any unmarried daughters. Very often premodern population statistics simply give the number

of *hu* living in a given jurisdiction. The problem for historians is figuring out how many people ("mouths" in Chinese) ***on average*** were in a household. Once this is decided, they can estimate population by simply multiplying the number of households by the "mouths" per household average.

It is interesting to note that in contemporary China, where statistical precision is an even more cherished goal, the household is still an important unit in population registration. The terminology still reflects traditional usage. The household register is called a *hùkǒu dēngjì běn* ("household population registration book") or *hùkǒu*, for short.

Japanese and Korean

The statistical categories for counting people are the same in Japan and Korea. Naturally, the pronunciation of these terms conforms to the national language. Consult a dictionary for pronunciation.