Results

Quantity Elasticities

Regression results for quantity Engel equations are reported in appendix tables 2 and 3. The log-log-inverse model fits the data well, as both the β_i and γ_i parameters are statistically significant in most equations. The year dummy variables are significant in about half of the equations—consumption of yogurt, milk, bottled water, fruit/vegetable juice, and mutton was up sharply in 2003 versus 2002, while consumption of flour, starches and tubers, chicken, and other poultry decreased in 2003. The decline in poultry consumption was probably tied to the outbreak of severe acute respiratory syndrome (SARS) during 2003, which was thought to be linked to poultry consumption. Adjusted R^2 values are very high due to the use of grouped data, which eliminates most of the individual household variation in quantities purchased (Cramer).

Since elasticities may vary with income, they were calculated at three representative income levels for rural households and four representative urban income levels. Elasticities for 15 general food categories are calculated for rural and urban households (table 2) and urban elasticities for 43 detailed food categories (table 3). We calculated rural elasticities at incomes of 900 yuan ($109), 2,500 yuan ($300), and 6,000 yuan ($725), which correspond to the lowest, middle, and highest quintiles of the rural population in 2003 (see table 1). Urban elasticities were calculated at income levels of 2,500 yuan ($300), 7,500 yuan ($900, approximately the median income for urban households), 10,000 yuan ($1,200), and 22,000 yuan ($2,660, the average income for the top income decile of urban households).

The estimate of the β_i parameter was significantly different from zero for 42 of 46 equations estimated for urban households (appendix table 2), indicating that the income elasticity of demand depends on the level of household income. For urban households, the β_i estimate was not significantly different from zero for just a few categories: rice, other grains, starches and tubers, and other poultry.[14] The sign on the estimate of β_i indicated that the elasticity tends to decrease as income rises. For rural households, β_i was significantly different from zero for only 5 of 12 food categories (appendix table 3). The range of incomes for rural households is much lower than for urban households, incomes of most rural households have not reached the threshold income where elasticity begins declining.

Quantity-income elasticities are less than 1 for nearly all food and beverage items, and they decrease in magnitude as income grows. At high income levels, elasticities of demand are close to zero for most food items, suggesting that top income households are approaching saturation levels of quantity consumed.

Quantity elasticities decline as income increases for nearly every food category. For example, the poultry elasticity is relatively high for rural households (0.63-0.74) and for low-income urban households (0.78), but declines to 0.25 for high-income urban households. Income elasticities for grains—

[14]Rice and starches and tubers had small negative elasticities. In the "other grains" equation, none of the parameters were significantly different from zero. We do not report elasticities for "other grains" or tubers and starches in table 3 since the parameters are not statistically reliable.

Table 2

Estimated income elasticities by food item and income level, rural and urban households, 2002-03

Food category		Rural households Income (yuan)			Urban households Income (yuan)			
		900	2,500	6,000	2,500	7,500	10,000	22,000
					Elasticity			
Grains	}[1]	0.18	0.06	0.02	0.01	-0.09	-0.10	-0.11
Starches and tubers					-.10	-.09	-.08	-.08
Edible oils		.51	.23	.14	.17	-.08	-.11	-.16
Vegetables		.60	.16	.03	.20	.09	.08	.05
Eggs		.72	.46	.38	.50	.10	.05	-.03
Pork		.25	.24	.23	.44	.13	.09	.03
Beef	}[1]	-.76	.39	.71	.93	.19	.10	-.06
Mutton					1.14	.18	.06	-.14
Dairy products		-1.50	.70	1.30	1.74	.64	.50	.28
Poultry		.74	.66	.63	.78	.38	.33	.25
Aquatic products		.91	.93	.94	.72	.52	.49	.45
Fruit	}[1]	.38	.48	.50	.95	.35	.27	.15
Melons					.85	.32	.25	.15
Alcohol		Data not available			.88	.16	.08	-.07
Other beverages					1.69	1.03	.94	.81

Note: Calculated using Engel regression results shown in appendix table 2. Elasticity = $-\beta/y + \gamma$ (see equation 7).
[1]Categories are combined for rural households.

Source: Estimations by ERS from China National Bureau of Statistics data.

which account for most calories consumed by Chinese people—are close to zero at all income levels, although they show a tendency to decrease from slightly positive for the poorest rural households to slightly negative at high incomes. Elasticities for vegetables and edible oils—also important components of the basic Chinese diet—are also close to zero. Vegetable and edible oil elasticities have small positive values at low income levels, but fall to near zero (for vegetables) or negative (for edible oils) at median urban income levels.

Demand for livestock products is strongly related to income at low income levels, but the relationship weakens as income grows. Eggs are an inexpensive source of protein, and their consumption is strongly related to income for rural households and poor urban households, but high-income urban households have very low egg-income elasticities. Pork is the dominant meat consumed in China, and its income elasticity is low compared with poultry, dairy, beef, and mutton. The pork elasticity is about 0.24 for rural households at all income levels, and relatively high (0.44) for poor urban households. However, the pork elasticity is just 0.13 at the urban median income and is near zero for high-income households. Beef, mutton, and dairy elasticities for urban households diminish with income. Each of these items has a high elasticity at an income of 2,500 yuan. The dairy elasticity remains positive even at high income levels, but beef and mutton elasticities diminish more rapidly.

The elasticities for dairy, beef, and mutton show a puzzling pattern for rural households. The estimated income elasticities for dairy and beef/mutton are negative at the lowest income level (900 yuan), become positive at an income of 2,500 yuan, and become even larger at an income of 6,000 yuan. At an income of 6,000 yuan, dairy has the highest income elasticity (1.3) of

Table 3

Estimated quantity-income elasticity by income level, and detailed food category, urban households, 2002-03

	Urban household income (yuan)			
	Low	Median	High	Highest
Category	2,500	7,500	10,000	22,000
		Elasticity		
Rice	-0.06	-0.05	-0.05	-0.05
Flour	-.14	-.58	-.63	-.72
Grain products	.42	.07	.02	-.05
Cakes	1.11	.44	.35	.22
Vegetable oils	.22	-.05	-.09	-.14
Animal fats	-.23	-.68	-.73	-.82
Other meats	1.08	.01	-.12	-.34
Meat products	1.29	.50	.40	.24
Chicken	.62	.30	.26	.20
Duck	.77	.31	.26	.17
Other poultry	.95	.82	.80	.78
Poultry products	1.48	.62	.52	.35
Fresh milk	1.75	.64	.50	.28
Milk powder	1.07	.22	.11	-.06
Yogurt	1.94	.75	.59	.35
Fish	.57	.40	.38	.35
Shrimp	1.53	.90	.82	.69
Other aquatic products	1.36	.83	.77	.66
Dried fruit	1.17	.42	.33	.17
Fruit products	1.32	.74	.67	.55
Nuts	.61	.40	.38	.33
Chinese liquor (*bai jiu*)	.46	-.20	-.28	-.41
Beer	1.14	.20	.08	-.11
Wine	.23	.60	.52	.38
Other alcohol	1.64	1.00	.92	.77
Soft drinks	1.23	.64	.56	.44
Fruit/veg juice	1.67	.86	.76	.60
Bottled water	2.02	1.19	1.08	.91
Tea leaf	.58	.29	.26	.20

Note: Calculated using Engel regression results shown in appendix table 2. Elasticity = $-\beta/y + \gamma$ (see equation 7).

Source: Estimations by ERS from China National Bureau of Statistics data.

any food category consumed by rural households. These puzzling patterns are likely a statistical artifact resulting from geographically distinct diets predominant in China's poorest regions. Historically, ruminant products have been the core of the diet for pastoral minority populations—Tibetans, Hui, Uighurs, and Mongolians—in grassland and mountainous areas such as Tibet, Xinjiang, and Inner Mongolia, all regions where animal herding is common. These minority groups are also the poorest people in China and are disproportionately represented in the lowest income quintile of the rural population. Consequently, consumption of milk, beef, and mutton for the lowest quintile of the rural population is much higher than in other quintiles. The result is a spurious negative relationship between consumption and income at very low income levels.

Consumption of ruminant products is strongly associated with access to modern retail outlets and food service. Milk is predominantly marketed

through supermarkets and convenience stores. Consumption of mutton and beef is rising, but it is usually consumed in the form of hamburgers, shish-kebabs, "hot pot," and dishes associated with ethnic minorities served primarily in restaurants or foodstands. The high elasticities for high-income rural households may reflect better access to supermarkets, restaurants, and refrigerator ownership by these households, which tend to live in more developed rural areas near cities and in wealthy coastal provinces. Another implication of these consumption patterns is that our estimates probably understate elasticities for beef and mutton since a large proportion of consumption may not be captured in at-home statistics.

Consumption of aquacultural products—mainly fish and shellfish—is strongly related to income at all income levels. The elasticity is over 0.9 for rural households at all income levels, and declines from 0.72 for poor urban households to 0.45 for high-income urban households. For rural households, aquacultural products are the most income-elastic category (except for dairy products for high-income households). For high-income urban households, aquacultural products have the second-largest elasticity (after other beverages).[15]

[15]Chern (1999) observed that consumption of aquatic products in China was much lower than in Japan and Taiwan.

Elasticities for more detailed food categories can further demonstrate which food items are most sensitive to income. A number of foods and beverages have elasticities exceeding 1 at low income levels that diminish sharply as income rises (table 3). For example, consumption of "other meats" (meats such as rabbit, donkey, dog, and wild animals) is strongly related to income at low income levels, but the elasticity reaches zero at an income of 7,500 yuan and is negative at higher incomes.

Basic staple foods—rice, wheat flour, and animal fats—have negative income elasticities at all income levels, indicating that they are inferior goods. Grain products (noodles, breads, dumplings) have a positive elasticity at low income levels that diminishes to near zero at high income levels. Higher income households likely substitute noodles, breads, and other processed grain products for wheat flour and rice. Vegetable oil has a small positive elasticity at low income levels, turning negative over the range of incomes earned by most urban households.

These subcategories reveal some differences in elasticities within categories. The elasticities for processed poultry and meat products exceed those of fresh meats and poultry. Demand for poultry products is slightly more income-elastic than is demand for meat products at all income levels. Chicken and duck have similar income elasticities. Demand for "other poultry" (such as wild birds, pigeon, turkey) remains strongly related to income at high income levels.[16] Demand for milk powder is less elastic than demand for fresh milk and yogurt. Demand for shrimp and other aquacultural products is more elastic than demand for fish.

[16]The year dummy variable for wild poultry was significant and indicated that consumption was over 20 percent lower in 2003 than 2002. This is likely due to the SARS outbreak in mid-2003, which was associated with wild poultry.

Demand for beer is highly elastic at low incomes, but the elasticity is negative at the highest income level. Traditional Chinese liquor (*bai jiu*) has a negative income elasticity at most income levels. Demand for wine (*putao jiu*) and other alcohol (like brandy and vodka, which are seldom consumed in China) is more elastic. Coffee/cocoa, soft drinks, bottled water, and fruit/vegetable juice have high income elasticities. These beverages were rarely consumed in China until recently, but have now become popular with

urban professionals. Tea, traditionally the predominant beverage in China, has a lower elasticity than any other beverage.

Expenditure Elasticities

Expenditure equations were estimated for 23 food categories for which urban expenditure data were available (appendix table 4). Expenditure data were not available for rural households. The γ_i^* parameter was significant in all but one (eggs) equation. The β_i^* parameter was significant for 16 of the 23 food categories, indicating that the expenditure elasticity varies with income for most foods. The β_i^* parameter is not significant for seven food categories, indicating a constant expenditure elasticity for grain, starches and tubers, beans, aquacultural products, fresh vegetables, vegetable products, and nuts. Constant elasticities are more common for expenditure elasticities than for quantity elasticities. In the quantity equations, β_i was significant in all but 3 of 46 food categories.

Most expenditure elasticities are larger in magnitude than the corresponding quantity elasticities, reflecting a "quality" effect whereby expenditures on most foods rise faster than the quantity purchased when household income grows. Expenditure elasticities for grain range from 0.11 to 0.16, while quantity elasticities for grain were negative for incomes of 7,500 yuan and above. These results indicate that households tend to spend slightly more on grain as their incomes rise, although they reduce the amount of grain they buy. The expenditure elasticity for poultry ranges from 0.96 at an income of 2,500 yuan to 0.42 at an income of 22,000 yuan (table 4), versus quantity elasticities of 0.78 and 0.25. Both expenditures and quantity purchased rise with income, but expenditures rise faster than quantity.

Most expenditure elasticities remain substantially greater than zero at the highest income level (22,000 yuan), while quantity elasticities for most food categories were close to zero or negative at the highest income level. For example, the quantity elasticity for vegetables is only 0.05 at an income of 22,000 yuan, but the expenditure elasticity for fresh vegetables at that income is 0.31. At an income of 22,000 yuan, quantity elasticities for meats ranged from 0.03 for pork to -0.14 for beef, but the expenditure elasticity at that income is 0.19. Thus, the additional food expenditure of high-income households mostly reflects increased unit value, or quality, of foods purchased rather than greater amounts.

Quality Elasticities

Quality-income elasticities were estimated for 17 food categories for which both quantity and expenditure elasticity estimates could be made (table 5). Expenditure and quantity elasticities were evaluated at each of the four urban income levels, and the quality elasticity was calculated as the difference between the expenditure and quantity elasticities. Estimates are presented for urban households only since expenditure data for rural households were not available.

All but one of the food categories have quality elasticities greater than zero, suggesting that Chinese households purchase higher quality food items as

Table 4

Estimated expenditure-income elasticities by income level, by food category, urban households, 2002-03

	Income elasticity at income level (yuan)			
Category	2,500	7,500	10,000	22,000
	Elasticity			
Grain	0.11	0.15	0.15	0.16
Starches and tubers	.11	.16	.17	.18
Beans	.22	.29	.30	.32
Oils	.28	.02	-.01	-.06
Meat	.70	.32	.27	.19
Poultry	.96	.55	.50	.42
Eggs	.53	.17	.13	.05
Aquatic products	1.06	.92	.90	.87
Fresh vegetables	.47	.35	.34	.31
Dried vegetables	1.27	.65	.58	.45
Vegetable products	.65	.57	.56	.54
Flavorings	.44	.33	.32	.30
Alcohol	1.11	.47	.39	.26
Other beverages	1.39	.84	.77	.66
Fresh fruit	1.05	.65	.60	.51
Fresh melon	1.13	.67	.61	.52
Dried fruit	1.35	.71	.62	.49
Fruit and melon products	1.40	1.05	1.00	.93
Nuts	.88	.74	.72	.69
Cakes	1.21	.76	.70	.61
Dairy	1.63	.79	.68	.51
Sugar	.75	.61	.60	.57
Tobacco	1.03	.52	.46	.36

Note: Calculated using Engel regression results shown in appendix table 4. Elasticity = $-\beta^*/y + \gamma^*$ (see equation 9).

Source: Estimations by ERS from China National Bureau of Statistics data.

Table 5

Quality and quantity elasticities by income level, urban households, 2002-03

	Income (yuan)							
	2,500		7,500		10,000		22,000	
Commodity	Quality	Quantity	Quality	Quantity	Quality	Quantity	Quality	Quantity
Grain	0.11	0.00	0.23	-0.09	0.25	-0.10	0.27	-0.11
Starches and tubers	.20	-.10	.25	-.09	.25	-.08	.26	-.08
Oils	.10	.18	.10	-.08	.10	-.11	.10	-.16
Meat	.12	.59	.14	.18	.14	.13	.14	.05
Poultry	.18	.78	.17	.38	.17	.33	.17	.25
Eggs	.03	.50	.07	.10	.07	.05	.08	-.03
Aquatic products	.34	.72	.40	.52	.41	.49	.42	.45
Fresh vegetables	.27	.20	.26	.09	.26	.08	.26	.05
Alcohol	.14	.88	.21	.17	.22	.08	.23	-.07
Nonalcoholic beverages	-.29	1.69	-.19	1.03	-.17	.94	-.15	.81
Fresh fruit	.11	.95	.30	.35	.32	.27	.36	.15
Fresh melon	.28	.85	.35	.32	.36	.26	.37	.15
Dried fruit	.18	1.17	.28	.42	.30	.33	.32	.18
Fruit and melon products	.08	1.32	.31	.74	.33	.67	.38	.55
Nuts	.27	.61	.34	.40	.34	.38	.36	.33
Cakes	.10	1.11	.32	.44	.35	.35	.39	.22
Dairy	-.11	1.74	.15	.64	.18	.50	.23	.28

Note: Quantity elasticities obtained from table 2. Quality elasticities = expenditure elasticity - quantity elasticity. Expenditure elasticities used in the calculation were obtained from estimates in appendix table 4. See equation 5.

Source: Estimated by ERS from China National Bureau of Statistics data.

their incomes rise. While quantities purchased tend to plateau at high income levels, expenditures continue to grow even as households reach high income levels. The quality elasticities reflect a change in the mix of products consumed (more processed products or more high-value products, like shrimp versus fish), as well as consumption of higher grade or branded products by households with higher incomes.

Most quality elasticities are in the range of 0.1 to 0.4. Aquacultural products have the highest quality elasticity. Eggs, edible oils, meat, poultry, and dairy products have elasticities of 0.07 to 0.17. Nonalcoholic beverages are the only category with a negative quality elasticity at all income levels. This reflects the high quantity elasticity for bottled water, an item with low unit-value compared with other nonalcoholic beverages.[17] Dairy products have a surprising negative quality elasticity at low income levels (the quantity elasticity is very high at this income level—1.74), but the quality elasticity is positive at median and higher incomes.

The quality elasticities for grain, starches and tubers, vegetables, and oils are much larger than the quantity elasticities. The quantity of processed products consumed tends to increase with income, while rice and wheat flour purchases decline. Households with higher income also are more likely to buy high-quality items like japonica rice from northeastern China, imported jasmine rice, refined soybean oil, "green food,"[18] or organic food products. The quality elasticities nearly match the quantity elasticities for some of the more income-elastic categories, such as fruit, melons, aquacultural products, nuts, and alcohol. At higher income levels (which have small quantity elasticities for these categories), the quality elasticity often exceeds the quantity elasticity for these categories.

Quality elasticities are modest for livestock products—meat, eggs, poultry, and dairy—ranging from 0.07 for eggs to 0.17 for poultry. This is surprising since our analysis of quantity elasticities showed that purchases of higher valued processed meat and poultry products are highly responsive to income.

Meals Away From Home

Our analysis considered only food consumed at home, but the rising share of spending on food consumed away from home is an important component of the increased demand for quality in Chinese food consumption. Away-from-home spending rose from 8 percent of urban household food expenditures in 1992 to nearly 20 percent in 2004 (fig. 6).[19] Expenditures on meals consumed in restaurants, cafeterias, or food stalls buy not only food, but also service and convenience. Data are not available to measure the unit value of food purchased away from home, but it is likely much higher than the unit value of food purchased for preparation at home.

Our elasticity estimates are based only on food purchased for consumption at home and so may understate the response of food demand to income growth. Estimates did not account for food consumed away from home, an increasingly common occurrence with the explosion of restaurants, cafeterias, and food stands in China. Studies by Ma et al. (2006) and Wang and Yang (2003) have shown that household surveys understate food consumption by failing to account for food consumed away from home.

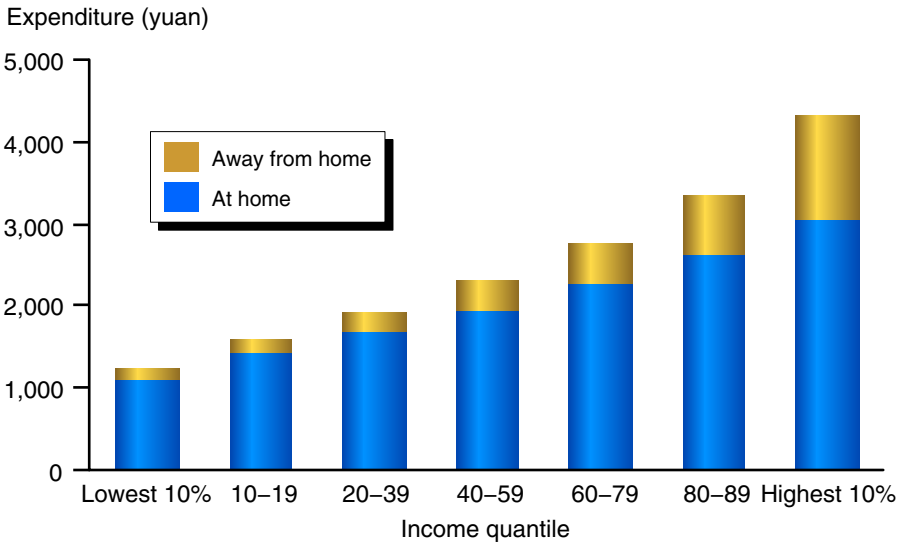
[17]As income rises, bottled water accounts for a greater share of the nonalcoholic beverage category. Since bottled water has a low unit value (it typically sells for 1 yuan or less in supermarkets), its increasing share reduces the average unit value in the category.

[18]"Green food" is a Chinese government standard for products grown to specifications that limit use of chemical inputs and set tolerance levels for pollutants in soil, air, and water in growing areas. These products are viewed as safer and sell at a price premium.

[19]Unpublished rural household survey data obtained by ERS from the China National Bureau of Statistics show that the away-from-home share of food expenditures for rural households rose from 2.4 percent in 1990 to 11.2 percent in 2003.

Figure 6

Per capita food expenditures, by urban household income quantile, 2003



Source: Calculations by ERS based on data from China National Bureau of Statistics.

In 2003, the lowest income decile of urban households devoted 8 percent of their food expenditures to food away from home, but the top 10 percent of urban households spent 30 percent away from home (fig. 6).[20] Thus, considering only food consumed at home also understates the strength of the relationship between food spending and income. Min et al. (2000) found that food away from home in China is a luxury item with an income elasticity of demand much higher than that in the United States. Gale et al. (2005) found that food away from home was the only rural food expenditure category with an expenditure elasticity greater than 1. They also found that the expenditure elasticity for food away from home was greater than elasticities for nonfood expenditures.

The urban household survey reports expenditures on food consumed away from home, but no quantities consumed away from home. Thus, it is possible to estimate an expenditure equation, but not a quantity or unit value elasticity.

In preliminary estimation, we rejected the log-log-inverse model for food-away-from-home expenditure, since the β_i coefficient was not significantly different from zero. This suggests that the double-log model is more appropriate and that the food-away-from home expenditure elasticity is constant across income levels.[21] Our double-log estimate of the Engel equation for food expenditures away from home gives us the following result (standard errors in parentheses):

$$ln e_j = \underset{(.089)}{-4.72} + \underset{(.010)}{1.20}\, ln y_j - \underset{(.012)}{.048}\, d_j + v_j, \quad R^2 = .999$$

All coefficients are significantly different from zero. The coefficient 1.2 on the $ln y_j$ term is the estimate of the elasticity of food-away-from-home expenditure with respect to household income. This is the largest expenditure elasticity of any food category. The only other food expenditure elas-

[20]This share is still less than the 42-percent share of food expenditures made away from home in the United States during 2004 (U.S. Bureau of Labor Statistics).

[21]Ma et al. found a food-away-from-home elasticity of 1.7. They also found that the elasticity increased with income, a result also found by Byrne and Capps' analysis of food-away-from-home expenditure in the United States.

ticity exceeding 1 is for processed fruit and vegetable products. The coefficient on the year dummy variable, d_j, is negative. Growth in food-away-from-home expenditure may have been dampened by the SARS crisis during May-June 2003 when most travel in China was halted and many restaurants were idled.

Since the data used for this study do not measure the quantity of food consumed away from home, the quantity elasticity of food away from home cannot be estimated. The food-away-from-home quantity elasticity is likely lower than the expenditure elasticity of 1.2. Food-away-from-home consumption probably has a significant quality elasticity, as do most categories of at-home food consumption. Households with higher income tend to consume food at establishments offering a higher level of service, which translates to a higher unit value of food consumed.[22] If we suppose that the quality elasticity for food away from home is 0.3 (in the range of those estimated for most at-home food categories), then the quantity elasticity for food away from home would be 1.2 - 0.3 = 0.9.

The quantity of food consumed away from home is a major source of uncertainty for analysts calculating food supply and disappearance in China. A sample survey conducted by Wang and Yang found that nearly half of meat was consumed away from home, and Ma et al. also found that a disproportionate amount of meat was consumed away from home. Both studies relied on their findings to reconcile the low per capita meat consumption figures reported from urban household surveys with meat disappearance statistics that suggest much higher consumption levels.

How much food is consumed away from home in China? The share has been growing rapidly, but is still small. While 18 percent of urban food *expenditures* (and 11 percent of rural food expenditures) were made away from home in 2003, the share of the quantity of food consumed away from home is considerably less. Much of the cost of meals consumed in restaurants represents the cost of nonfood services and materials such as labor, rent, equipment, furnishings, utilities, and taxes. If these nonfood costs account for half of restaurant costs, then the cost of food ingredients in restaurant meals may be half of away-from-home food expenditures.[23]

The average per capita expenditure on food away from home in 2003 for urban households was 438 yuan, or 18 percent of food expenditures. If nonfood costs of restaurant meals represent half of expenditures on food away from home, then the cost of food ingredients to prepare restaurant meals would be 219 yuan. Distributing away-from-home expenditure to major food items using shares reported by Ma et al. allows us to estimate expenditures on individual food groups. The expenditures can then be divided by average unit values calculated from urban household survey data to estimate the quantity consumed away from home.[24] This away-from-home quantity is used with the at-home quantity reported by the urban survey to calculate the share of each food item consumed away from home.

Shares of food quantity consumed away from home vary across food categories from 5 percent of fruit to 16 percent of meat (table 6). These shares are modest, and all are less than the 18-percent share of food expenditures made away from home. The 16-percent share of meat consumed away from home is

[22]For example, a low-income person may consume a meal at a roadside stand while a high-income person patronizes luxury restaurants. Both meals may contain the same quantity of food, but differ dramatically in cost. It is conceivable that a high-income person may spend several times the amount spent by a low-income person on food away from home, but only consume a slightly larger quantity of food away from home.

[23]In the United States, our calculations using 2002 Economic Census data (U.S. Bureau of the Census) show that employee payroll alone averages nearly 30 percent of sales by food and drinking establishments. Similar data are not available for China.

[24]Dividing by average unit values assumes that the unit values paid by consumers are similar to the cost of raw food materials procured by restaurants.

much lower than the 50-percent share estimated by Wang and Yang. The 11-percent estimate of grain consumed away from home is also less than the 14.7-percent estimate reported by FAO. However, these estimates are slightly higher than another estimate of 8 percent cited in the FAO study.[25]

These estimates indicate that a significant share of many food items passes through restaurants, cafeterias, food stalls, and other foodservice establishments. Still, roughly 90 percent of urban food is consumed at home. The high expenditure elasticity for food expenditures away from home suggests that the share of food passing through these channels will rise as household incomes grow further.

[25]Estimates are for urban households only. National shares of food consumed away from home would be lower since rural households consume much less food away from home

Table 6
Estimated food expenditures and quantities consumed away from home, Chinese urban households, 2003

Item	Expenditures	Unit value[1]	Away-from-home quantity[2]	At-home quantity[3]	Away-from-home share
	Yuan	*Yuan/kg.*	*Kg.*	*Kg.*	*Percent*
Meat and poultry	83 [4]	12.5	6.7	36.0	16
Eggs	7	5.2	1.3	11.3	10
Fish	15	12.9	1.2	13.2	8
Grain	26	2.7	9.7	79.0	11
Vegetables	26	1.7	15.5	116.5	12
Fruit	9	2.9	3.0	60.5	5
Other foods and beverages	53				

[1] Unit values calculated by dividing expenditure by quantity purchased reported by China urban household survey.
[2] Expenditures divided by unit value.
[3]Per capita quantities reported by China urban household survey.
[4] Cost of food ingredients was apportioned among food categories using shares reported by Ma et al.

Source: ERS estimates based on China National Bureau Statistics and other sources as noted.