
Section V: Data Collection Methodology

Household Consumption Survey

Overview

The purpose of the Household Consumption Survey (HCS) was to identify proportional expenditure patterns for the major market basket components for each GDP. The survey data was then used as the basis for development of statistical weights for each major consumption category.

The 50-question HCS collected data on household spending related to housing (including all utilities), food, transportation, health care, and clothing. The survey also collected data on household size and income. The HCS included 2,547 surveys with randomly selected households located in 74 communities throughout Alaska.

Survey Content Development

The project team began by conducting a review of the survey instrument used in the 1985 study, as well as a detailed analysis of the application of the data. Survey completion time in 1985 ranged from approximately 25 minutes to an hour. This length was deemed far too long in the modern survey environment and would have resulted in a high number of initial refusals and mid-survey terminations.

The updated survey instrument retained essential questions regarding housing, household size, income, and estimated expenditures for major components of the household budget. After briefly introducing the study purpose, the surveyor asked to speak with the person most familiar with the household's spending. The initial questions in the survey addressed household size and expenditures for shelter, fuels and utilities. Shelter costs captured data on mortgage payments, property taxes and insurance, rental costs and condo fees. Respondents were asked to estimate living space size, which allowed the study team to calculate average cost per square foot for each location. Fuel consumption categories included oil, natural gas, propane, coal, kerosene, electricity, and firewood. Utility categories included water, sewer, and garbage services.

The major expenditure components of the survey were based on Consumer Price Index categories, including food and beverage, apparel, transportation, medical care, and other goods and services. In addition to estimating household expenditures in dollar amounts, respondents were asked to allocate their spending as a percentage of their income for four major categories. The percentages were used to corroborate findings from the previous questions.

The survey instrument was pretested in numerous rural and urban communities. Average completion time during the pretest phase was approximately 15 minutes. The State of Alaska had an opportunity to review and comment on the survey instrument before fielding. A copy of the final survey instrument is included in the Appendix.

Sample Distribution

The first step in devising the sample distribution was developing a community profile for each Alaska location with one or more state employees. Employment data for 2007 and 2008 was provided by the Department of Administration. Additional information in the community profiles included population, per capita income, median household income, number of households, household size, borough or census area, median home value, median mortgage payment, median rental payment, and percentage of adults in the labor force. The profiles also included information about the closest major hub community, distance to the hub, and if there was access by road, ferry, barge, or airplane. Finally, the project team classified each community in terms of the 1985 GDP pools and current House and Senate election districts. Numerous data sources were utilized including 2000 Census data, Alaska Department of Labor and Workforce Development data, and information from the Division of Elections.

Following a detailed analysis of the community profile data, a total of 18 sample blocks were defined for purposes of sample distribution. The sample blocks ensured sufficient sample sizes in various regions for statistical analysis, especially critical for communities with very small populations. The largest communities and most populous boroughs formed their own sample blocks. Small and mid-size communities were grouped with others that shared similar demographic and geographic characteristics. Within each sample block, household surveys were distributed in proportion to community population.

Together, Alaska's largest population centers were allocated 1,500 of the 2,547 surveys. Anchorage, Fairbanks and Juneau had sample sizes of 300 surveys each. Two hundred surveys were assigned to the sample blocks for the Mat-Su region, Kenai Peninsula Borough, and the combined Ketchikan/Sitka area. The rest of the surveys (1,047) were distributed among the remaining sample blocks on the basis of population and number of state employees.

The table below shows the number of completed surveys in each of the 18 sample blocks and the maximum margin of error associated with each sample. Due to the nature of response distribution in sample statistics, most survey responses are more accurate than the maximum margin of error suggests.

It is important to note that the telephone survey did not include every single Alaska location. Instead, the sample plan was developed to ensure that every Alaska location with a state employee was included in the HCS and RPS data collection efforts. As a result of this approach, the study population represented 92 percent of the statewide population. Surveying the remaining Alaska residents proportionally by population would have further minimized the sample sizes for communities with state employees, and resulted in extremely small sample sizes for any additional communities included in the study.

See table next page

**Table V-1: Household Consumption Survey Sample Sizes
and Associated Margins of Error**

Sample Block	Sample Size	Maximum Margin of Error
1: Anchorage	300	±5.8%
2: Fairbanks	300	5.8
3: Parks/Elliott/Steese Highways	65	12.0
4: Glennallen Region	50	14.2
5: Delta Junction/Tok Region	76	11.5
6: Roadless Interior	51	13.5
7: Juneau	300	5.8
8: Ketchikan/Sitka	200	7.1
9: Southeast Mid-Size Communities	104	10.0
10: Southeast Small Communities	52	14.2
11: Mat-Su	187	7.2
12: Kenai Peninsula	200	7.1
13: Prince William Sound	100	10.0
14: Kodiak	104	10.0
15: Arctic Region	153	8.2
16: Bethel/Dillingham	151	8.2
17: Aleutian Region	77	11.5
18: Southwest Small Communities	77	11.5

While communities were clustered into the sample blocks to ensure that the HCS sample was large enough for statistical analysis, a unique identifying number was assigned to each community. Any data collected during the study was consistently assigned the appropriate community number (including HCS, RPS, and secondary data), preserving the project team's ability to analyze the study findings in any community combination.

Statistical Reliability

Statistical tolerances are based on the assumption that when a sample is drawn randomly from a sufficiently large population, survey responses will be distributed within a predictable range if the survey were to be replicated. The margin of error is a function of both sample size and the variability of responses. A sample size of 50 may have a margin of error as low as ±2.8 percent, or as high as ±14.2 percent, depending on the uniformity of responses to each survey question. The ranges associated with survey sample sizes in this study are provided in the following table.

Table V-2: Margin of Error Ranges

Sample Size	Margin Of Error Ranges
50	± 2.8 - 14.2%
75	2.3 - 11.5
100	2.0 - 10.0
150	1.6 - 8.2
200	1.4 - 7.1
250	1.2 - 6.3
300	1.1 - 5.8

Other factors that affect statistical reliability include the size of the population and “nonsampling” sources of error, such as biased wording of questions or inconsistent recording of responses. In general, samples drawn from very small populations have lower margin of error ranges. Careful sample control and fielding procedures were employed to minimize nonsampling errors.

Another factor that can affect the statistical reliability of household telephone surveys is the number of households that only utilize cell phones. Major Alaska phone service providers estimate that 12 to 13 percent of the population falls into this category. The project team compared the HCS data to census data and other secondary research and determined that no systemic bias resulted from calling households with traditional phone lines.

Fielding Protocols

A household telephone survey was utilized for this study, as it offered a superior degree of statistical reliability and efficiency when compared to alternative methods such as mail surveys, Internet-based surveys or personal intercept interviews.

McDowell Group collaborated with GMA Research of Bellevue, Wash. to field the survey. GMA Research conducted 1,500 surveys in the seven most-populated areas in the state: Municipality of Anchorage, Fairbanks North Star Borough, City and Borough of Juneau, Ketchikan Gateway Borough, City and Borough of Sitka, Mat-Su Borough, and Kenai Peninsula Borough. Telephone lists were purchased from Survey Sampling Inc., a source frequently used for this type of research. Telephone numbers were randomly selected, ensuring all households had an equal opportunity of being selected in the sample.

McDowell Group conducted the phone surveys in the remaining communities. Households were randomly selected from published phone directories. A minimum of three calls were made to each primary number over a period of several days before selection of a secondary number. The field staff adhered to strict protocols prescribing the method for selection of an alternative household if contact could not be established or a household declined to participate in the study.

In all communities, respondents were screened for the person that was most familiar with household spending. Surveys were conducted on weekday evenings and weekend days allowing for maximum participation.

McDowell Group developed fielding protocols, conducted survey pretests, and conducted all surveys in rural communities. To ensure consistency of training and protocol implementation, McDowell Group project

management was present when GMA Research survey staff was trained and commenced surveying. Field management staff from the two firms communicated daily throughout fielding, data entry and statistical analysis. Survey field managers and staff in both locations were briefed frequently to ensure data was captured consistently.

Phone Survey Disposition

The telephone surveys were conducted between October 10 and November 15, 2008. The average HCS length was approximately 13 minutes. The total number of completed surveys was 2,547. Total contacts and refusals were tracked separately by GMA Research and McDowell Group. Results for each survey fielding location are provided below.

Surveys for the larger, urban areas were conducted using Computer Assisted Telephone Interviews (CATI). More than 19,500 calls were made. Approximately 11 percent of those contacted declined to participate, either through an initial refusal or mid-survey termination. Of the remaining calls, nearly 16,000 resulted in no contact (such as message machine, no answer, out of service, or fax). A total of 1,500 household surveys in urban areas were completed. GMA did not retain data from surveys that were terminated before completion.

In small communities, a total of 6,206 calls were made. Approximately 18 percent of the households declined to participate. Of the remaining 5,060 calls, approximately 4,000 resulted in no contact (such as message machine, no answer, out of service, or fax). A total of 1,047 household surveys in rural communities were completed. In a few instances, McDowell Group included responses from nearly completed surveys in the final data set to add to the statistical reliability at the community and sample block level.

The call disposition is typical for telephone survey research. In the 1985 GDS, a total of 23,065 calls were completed; 18,834 of the calls resulted in no contact (no answer, busy, disconnected, fax, or a business listing).

Table V-3: HCS Phone Survey Disposition

Survey Fielding Location	Completed Calls
GMA Research/Urban Areas	
Total calls	19,532
Initial refusals/terminations	2,092
No contact	15,950
Completed interviews	1,500
McDowell Group/Small Communities	
Total calls	6,206
Initial refusals/terminations	1,146
No contact	4,013
Completed interviews	1,047

All HCS data was entered into a single database. HCS data management was handled in both Microsoft Excel and SPSS. An extensive data cleaning process removed outlier or other irregular values from the analysis.

Survey Distribution by Community

The table below provides detailed information at the community level for each sample block. The number of surveys allocated to each sample block was influenced by population and number of state employees. For sample blocks comprised of multiple communities, surveys were distributed proportionally according to community population.

Table V-4: Household Consumption Survey Sample Sizes, Population and State Employees

Sample Block and Community	Sample Size	2007 Population	State Employees
1: Anchorage	300	283,823	5,192
2: Fairbanks North Star Borough	300	90,963	1,581
3: Healy	22	1,027	9
3: Cantwell	4	183	14
3: Central	2	95	4
3: Nenana	7	357	7
3: Manley Hot Springs	1	72	2
3: Talkeetna	29	848	9
4: Glennallen	41	1,845	34
4: Chitina	3	124	6
4: Paxson	1	32	6
4: Slana	3	108	7
4: Tazlina	2	219	25
5: Delta Junction	53	3,836	46
5: Tok	21	1,353	56
5: Eagle	1	109	5
5: Northway	1	81	7
6: Galena	21	609	11
6: Fort Yukon	20	591	2
6: McGrath	10	315	26
7: Juneau	300	30,305	3,361
8: Ketchikan	120	13,160	673
8: Sitka	80	8,640	198
9: Craig	13	1,359	13
9: Haines	23	2,257	51
9: Klawock	7	743	12
9: Metlakatla	12	1,282	1
9: Petersburg	30	3,071	48
9: Wrangell	19	1,947	22
10: Hoonah	14	852	6
10: Skagway	14	845	13
10: Yakutat	10	621	15
10: Elfin Cove	1	21	1
10: Gustavus	8	442	2
10: Pelican	3	110	1

Table V-4 cont'd: Household Consumption Survey Sample Sizes, Population and State Employees

Sample Block and Community	Sample Size	2007 Population	State Employees
10: Tenakee Springs	2	102	1
11: Palmer	37	5,504	565
11: Wasilla	82	7,025	185
11: Willow	24	2,048	7
11: Other Mat-Su Borough	44	64,631	58
12: Seward	22	2,661	338
12: Kasilof	4	596	1
12: Kenai	77	6,971	245
12: Nikiski	6	4,345	2
12: Soldotna	23	3,982	216
12: Sterling	10	5,123	2
12: Homer	26	5,502	104
12: Anchor Point	6	1,814	8
12: Cooper Landing	2	353	2
12: Ninilchik	4	778	7
12: Seldovia	6	429	1
12: Other Kenai Peninsula	14	15,468	11
13: Cordova	37	2,192	82
13: Valdez	60	3,599	65
13: Whittier	3	174	4
14: Kodiak	104	13,586	188
15: Barrow	56	4,052	19
15: Kotzebue	44	3,133	41
15: Nome	48	3,495	179
15: Teller	5	256	2
16: Bethel	106	5,650	218
16: Dillingham	45	2,404	77
17: Adak	2	136	3
17: Cold Bay	1	72	6
17: King Cove	10	756	1
17: Sand Point	13	992	8
17: Unalaska/Dutch Harbor	51	3,677	29
18: Aniak	11	506	13
18: Anvik	2	102	3
18: Chignik	2	81	9
18: Emmonak	17	777	12
18: Goodnews Bay	5	235	0
18: Iliamna	2	93	5
18: King Salmon	9	426	50
18: Saint Mary's	12	521	20
18: Unalakleet	17	724	5

Retail Price Survey

Overview

The Retail Price Survey (RPS) included collection of retail price data for a market basket of approximately 200 goods and services throughout Alaska. McDowell Group priced an extensive list of consumer products for each of the communities listed in the table below. The first column indicates that data was collected personally by McDowell Group staff. The second column indicates that merchants assisted the study effort by providing price data by phone or fax. Additionally, price data was collected for numerous household services including energy and utility costs, health care, transportation, communications, and insurance for the 58 locations in the table, plus the additional 15 communities listed on the following page.

Table V-5: Communities Included in RPS Market Basket Pricing

Community	In Person	Phone/Fax	Community	In Person	Phone/Fax
Anchor Point	X		Kotzebue		X
Anchorage	X		Manley Hot Springs		X
Aniak		X	McGrath		X
Barrow		X	Metlakatla	X	
Bethel		X	Nenana	X	
Cantwell		X	Ninilchik	X	
Central		X	Nome	X	
Chitina		X	Palmer	X	
Cordova	X		Pelican		X
Craig	X		Petersburg	X	
Delta Junction	X		Saint Mary's		X
Dillingham		X	Sand Point		X
Eagle		X	Seldovia		X
Emmonak		X	Seward	X	
Fairbanks/North Pole	X		Sitka	X	
Fort Yukon		X	Skagway	X	
Galena		X	Soldotna	X	
Glennallen	X		Talkeetna	X	
Gustavus	X		Teller		X
Haines	X		Tenakee Springs		X
Healy	X		Tok	X	
Homer	X		Unalakleet		X
Hoonah	X		Unalaska/Dutch Harbor		X
Juneau	X		Valdez	X	
Kenai	X		Wasilla	X	
Ketchikan	X		Whittier		X
King Cove		X	Willow	X	
Klawock	X		Wrangell	X	
Kodiak	X		Yakutat		X

Table V-6: List of Additional Communities Included in Energy and Service Pricing

Community	
Adak	King Salmon
Anvik	Livengood
Chignik	Nelchina
Cold Bay	Northway
Denali	Paxson
Elfin Cove	Slana
Goodnews Bay	Tazlina
Iliamna	

It is important to differentiate the RPS methodology (which produced a representative assortment of product and service prices available within each community) from the HCS methodology (which produced statistically reliable data regarding the community's typical consumption patterns). The project team's usage of the two methods together yields statistically defensible results, particularly when the data is aggregated into clusters of communities that share common geographic and socio-economic characteristics.

Selection of Market Basket Items

In 1985, the RPS included more than 300 items. After a thorough review and pretesting process, McDowell Group reduced the RPS to approximately 200 goods and services. The team began with examination of the 1985 survey instrument and associated economic analysis to understand the relative importance of each category and product in the economic model. The team also reviewed survey instruments, weighting factors, and secondary data from Bureau of Labor Statistics, Consumer Price Index, ACCRA Cost of Living Index, and other sources. Product and merchant lists from the State of Alaska WIC program also were reviewed.

To ensure that the market basket reflected current consumption habits, as well as the unique purchasing patterns of rural residents, McDowell Group secured the cooperation of two major Alaska retailers. Fred Meyer (retail stores located in major communities in the Interior, Southcentral, and Southeast regions of the state) and Alaska Commercial Co. (retail stores located in numerous remote, rural locations in northern and western Alaska) provided confidential sales volume data for top-selling products in each of the major market basket categories carried by their respective stores. McDowell Group also consulted secondary sources of data regarding Alaska resident consumer purchasing such as Motor Trends, Business Week and Consumer Reports. The market basket was further refined to reflect top-selling products, brands and sizes.

Field management staff conducted multiple pretests with the market basket in Juneau and Anchorage, making refinements based on product availability and prices in independently owned retailers as well as larger chains. During the pretesting phase, the RPS training instructions and protocols were updated from the previous study.

Food products dominated the items included in the market basket, as they typically represent a large portion of a household's expenses. Food categories included:

- Meats, poultry and fish
- Cereals and breads
- Dairy products
- Fruits and vegetables
- Other food items
- Food consumed away from home.

Additional market basket categories included:

- Housing
- Transportation
- Clothing
- Medical
- All other household expenditures.

Surveyors priced a list of products for each of the RPS categories. The market basket included a brief product description and unit size if applicable. In any instance that a specific brand was requested, the surveyor was also instructed to record the price for the most popular alternative item in that category (as indicated by item placement and allocation of shelf space). Similarly, if the specific size or number of units was not available, the surveyor was instructed to record the price and size/quantity for the closest alternative. A comparable price was computed as data was entered in the McDowell Group office. These fielding protocols for selecting alternative products allowed the field team to utilize the RPS market basket consistently in retail stores throughout the state. The RPS collected regular (full-price) retail prices, recognizing that sale prices or other temporary changes could affect the outcome of the study.

The State of Alaska reviewed the market basket before fielding commenced. A copy is included in the Appendix.

Selection of Communities Included in the RPS

McDowell Group developed a plan for RPS data collection based on community population, number of state employees, and other demographic and geographic information. Energy and service price data was collected for every community included in the study. Nearly 60 communities were selected for inclusion in pricing of approximately 175 consumer products.

Two methods were utilized to obtain prices: personal data collection and phone/fax requests for merchant or service provider assistance. In general, communities located along the road system, in Southeast, or having a population larger than 2,000 were surveyed in person. Small, remote communities (typically with populations between 100 and 500) were targeted for direct contact with merchants to request pricing assistance. Due to time and project cost constraints, several larger communities in the northern and western regions were grouped into the phone/fax category, including Barrow, Kotzebue, and Unalaska/Dutch Harbor. Alaska

Commercial Co. provided price data for 15 locations included in the study. Given their prominence in the northern and western regions of the state, their support was integral to the success of the phone/fax method.

Selection of Retail Outlets

The RPS methodology did not seek the lowest price, or the price in every possible outlet, but the price commonly paid by most households. To identify the retail outlets to be included in the RPS, field staff developed an initial inventory of all relevant retail locations for each community. The most popular retailers were identified through personal knowledge about the community, interviews with community leaders, and review of community directories and other listings.

Retail prices were collected from multiple locations wherever possible. In recognition of the large number of state employees — and the role that Anchorage, Fairbanks and Juneau have as regional retail and service hubs — more price data was collected for these three locations. In the baseline community of Anchorage, eight prices were collected for each product or service in the market basket whenever possible. In Fairbanks and Juneau, six prices were collected for each market basket item. In all other communities, the field staff collected four prices where possible. The field staff maintained detailed records of the 634 retail outlets included in the consumer product portion of the RPS.

Before fielding commenced, McDowell Group verified that regular prices are typically identical when a retailer has multiple outlets in a single location. This information allowed the RPS field staff to include a greater variety of retailers in the data collection efforts. Grocery prices were later weighted by store and community, to reflect consuming purchasing data collected in the HCS.

Methods of Collecting Price Data

Multiple methods of collecting data were warranted due to the widely dispersed locations of Alaska communities, the inclusion of both products and services in the market basket, and the extensive amount of information collected.

McDowell Group utilized existing survey staff located in Anchorage, Fairbanks, Juneau, and Ketchikan. These four teams personally completed the RPS consumer product pricing in the 33 largest and most accessible locations. Following pretesting efforts in Juneau and Anchorage, McDowell Group's statewide field manager conducted training for field staff in all field locations, ensuring consistency in data collection.

The majority of data collection for RPS in-person communities was completed over a four-week period. Pre-testing and training occurred in late October. Retailers were contacted between mid-November and mid-December for the remaining 25 communities. The market basket was modified to collect prices from a single retail location, and an introduction and instruction letter was developed for this purpose. Additionally, the market basket was streamlined to reflect the product categories in each participating store. Field staff completed reminder calls, emails and faxes as needed to encourage completion and return of the market basket. Some retailers with multiple locations opted to provide data through their central business office, while others responded individually.

Pricing Goods Purchased Outside the Community

Whenever possible, the market basket was populated with products available in each community, as this most accurately reflected the differential in the cost of living between a particular community and the base community of Anchorage. After the initial data collection process was completed, gaps in the market basket for each community were addressed. Alternative prices were imputed when the market basket was incomplete, or when the HCS clearly indicated that a significant portion of residents were bypassing local grocery stores for the majority of their food purchases.

The project team developed a statewide impute plan, identifying the nearest hub for each community for each major product and service categories: groceries and liquor, clothing and small appliances, large appliances, transportation and other services. (Prices were not imputed for restaurant, bar and entertainment categories.) It was possible for a single location to have different hub communities for different product categories. For example, residents in a small community might be able to purchase groceries in another nearby small community, but would likely have to obtain large appliances or automobiles from a major urban center.

Shipping costs depended on the product and the most common method of transferring products between the hub and specific communities. The study team conducted numerous interviews with retailers and freight providers, and examined shipping policies from a wide array of retailers, to identify the most commonly used transportation methods and associated prices.

Data from the HCS regarding grocery purchases revealed noticeable differences between communities on the road system and those whose access to a hub community was only by air or water. Many residents on the road system stated they did a majority of their grocery shopping in Anchorage, Fairbanks, or the Palmer/Wasilla area, depending on their proximity to each hub. This purchasing pattern data also helped to guide where prices would be imputed from for other products and services. The study team decided any product and service prices imputed into road-accessible communities would be done without adding additional shipping costs, as associated increases in transportation costs were already captured in the HCS consumption data.

Residents in communities located off the road system tended to purchase the majority of their food from local retailers. In the few instances that prices for individual items were imputed, it was done without adding freight costs. This approach was reinforced by the observation that food shopping in hub communities is commonly clustered with other travel motives and purchases. As with residents in road-accessible communities, transportation costs are more appropriately reflected in another portion of household spending than by adding the cost of an air or ferry ticket to a food product price.

The project team then examined typical shipping methods and associated costs for clothing and small appliance retailers that offered the items in the consumer market basket. Shipping costs typically ranged from free shipping to an additional 32 percent of the product cost, depending on the product type, weight, total value of goods purchased, delivery speed and shipping distance. The study team also recognized that many clothing and small household items are purchased when residents are traveling in urban centers, rather than being purchased and shipped individually. After consideration of the numerous factors that affect shipping

costs for clothing items, the project team elected to add 10 percent to clothing prices imputed from a hub community to those located off the road system.

To account for shipping costs for smaller household furnishings and appliances, the project team averaged shipping costs from several retailers that offered the specific market basket items. Prices were computed separately for each market basket item, as product prices and weights varied considerably. No shipping costs were added to computers, as many in-state and national retailers offer free shipping. A flat fee was added to the rifle cost when prices were imputed to account for the shipping and handling fees typically charged by merchants (possession of a Federal Firearms License is required).

Shipping options for large appliances and household items (such as mattresses and washing machines) were somewhat more limited due to their size and weight. Fortunately, it was only necessary to impute prices for a few Southeast communities and one community on the Yukon River. Typical shipping prices were determined from calls to transportation providers and retailers in the specific regions, and then added to the hub community prices.

The transportation items were addressed according to community geography and transportation linkages. Ferry prices, determined on the basis of vehicle length, were easily obtained for all communities accessible by either the Alaska Marine Highway or Inter-Island Ferry Authority. The ferry transportation cost was simply added to the vehicle price. Commercial barge and landing craft operators were interviewed to obtain representative prices from marine-accessible communities without ferry service. Air freight prices were obtained for several of the northern and interior locations.

Data Cleaning and Management

All RPS price data was compiled and managed in Excel. When applicable, prices were increased to account for local sales taxes, alcohol taxes, and tobacco taxes. The data also underwent an extensive cleaning process in which outlier values were removed prior to calculating average prices among specific items. Average prices for a particular item in each community were compared to the average price for the same item in Anchorage to produce a price differential. These individual item price differentials were then averaged with price differentials for other items in the same subcategory of items. For example, the price differential for hot dogs was averaged with the price differential for other meat products to determine a subcategory “Meat, poultry and fish” average-price differential. When communities were grouped together to produce sample block or district differentials, all pricing data was weighted according to community population. (This process is discussed in more detail in subsequent chapters.)

