

**Cadastral Records, Property Taxation, and  
the Privatization of Property in  
the Republic of Armenia**

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## ABSTRACT

This report surveys the status as of early August 1993 of developments in the Republic of Armenia related to (1) the establishment of a greater range of private property rights and a system for recognizing who possesses rights to specific parcels of immovable property, (2) privatization programs, (3) the operations of open markets for immovable property, and (4) instituting taxes on the value of land and buildings. It focuses on institutional arrangements, draft property tax legislation, and cadastral systems. It evaluates progress and offers recommendations.

CONTENTS

Page	
EXECUTIVE SUMMARY . . . . .	vi
I. BACKGROUND . . . . .	1
II. PRIVATE PROPERTY RIGHTS AND PRIVATIZATION. . . . .	2
A. Property Rights. . . . .	2
1. Concepts . . . . .	2
2. Private Property Rights in Armenia . . . . .	4
B. Privatization. . . . .	5
1. Agricultural Land. . . . .	5
2. Urban Land . . . . .	5
3. Housing. . . . .	5
4. Enterprises. . . . .	6
5. Administration . . . . .	6
C. Market Activity and the Development of a Real Estate Industry . . . . .	7
D. Land Use Controls. . . . .	8
III. PROPOSED PROPERTY TAXES. . . . .	10
A. Introduction . . . . .	10
1. Underlying Principles. . . . .	10
2. System Overview. . . . .	12
3. The Legislative Process in Armenia . . . . .	12
4. Status of Proposed Property Tax Legislation. . . . .	12

	B.	Law of Republic of Armenia about Land Tax. . . . .	.13
	1.	Chapter 1. Object of Taxation and Payers..	.13
	2.	Chapter 2. Basis of Taxes and Tax Rates ..	.14
	3.	Chapter 3. Land Tax Exemptions (Privileges).	.16
	4.	Chapter 4. Tax Administration . . . . .	.17
	5.	Chapter 5. Other Provisions . . . . .	.18
	C.	Law of Republic of Armenia about Property Tax..	.19
	1.	Chapter 1. Property Subject to Tax and Definition of the Taxpayer. . . . .	.19
	2.	Chapter 2. Basis of Taxation and Tax Rates	.20
of	3.	Chapter 3. Determination of Tax Due and Dates Payment. . . . .	.21
	4.	Chapter 4. Property Tax Privileges. . . . .	.22
	D.	Transfer, Inheritance, and Gift Taxes. . . . .	.23
	E.	Other Matters. . . . .	.25
	1.	Tax Incentives . . . . .	.25
	2.	Related Laws . . . . .	.25
IV.		ADMINISTRATIVE ORGANIZATION. . . . .	26
	A.	Current Central Government Organization. . . . .	.26
	B.	Local Government Organization. . . . .	.27
	C.	Other Institutions . . . . .	.28
	D.	Organizing the Cadastres and the Property Tax Administration . . . . .	.28
V.		DEVELOPING CADASTRAL RECORD SYSTEMS. . . . .	.31
	A.	Modern Cadastral Record Systems. . . . .	.31

1.	Cadastral Maps . . . . .	.31
2.	Cadastral Numbering Systems. . . . .	.33
3.	Title (Ownership) Records. . . . .	.34
4.	Land and Building Characteristics. . . . .	.34
5.	Sale Price and Other Market Data . . . . .	.36
B.	Existing Cadastral Records in Armenia. . . . .	.37
1.	Cadastral Maps . . . . .	.37
2.	Cadastral Numbering System . . . . .	.37
3.	Ownership Records. . . . .	.38
4.	Land and Building Records. . . . .	.38
5.	Sale Price and Other Market Data . . . . .	.39
6.	Movable Property Register. . . . .	.40
C.	Recommendations. . . . .	.40
1.	Overview . . . . .	.40
2.	Urban Land Cadastre. . . . .	.41
3.	Other Matters. . . . .	.43
VI.	VALUATION. . . . .	.45
A.	Contemporary Valuation Practices . . . . .	.45
1.	Market Monitoring and Analysis . . . . .	.45
2.	Mass Valuation . . . . .	.45
3.	Model Application and Valuation Review . . . . .	.49
4.	Communicating the Results. . . . .	.50
B.	Starting Prices in Armenia . . . . .	.51

C.	Future Plans . . . . .	.52
VII.	TAX ADMINISTRATION . . . . .	.53
VIII.	PUBLIC INFORMATION AND ASSISTANCE. . . . .	.54
IX.	COMPUTER TECHNOLOGY. . . . .	.56
A.	Overview . . . . .	.56
1.	System Components. . . . .	.56
2.	System Development Strategies. . . . .	.57
B.	The Current Situation in Armenia . . . . .	.58
X.	IMPLEMENTATION PLANNING. . . . .	.60
Annexes	. . . . .	.61

## EXECUTIVE SUMMARY

The Republic of Armenia is creating a multi-faceted new legal and institutional framework designed to legitimate a democratic political system committed to a market economy. This is a challenging prospect. This report addresses systems needed to support this effort. These include the establishment of a greater range of private property rights and a system for recognizing who possesses rights to specific parcels of immovable property. At the same time, programs for transferring immovable property from the state to private parties must be created. In addition, open markets for immovable property must begin to function efficiently. Finally, taxes on property need to be instituted.

### A. PRIVATE PROPERTY RIGHTS AND PRIVATIZATION

Concepts regarding private ownership of land and buildings are evolving in Armenia. Some rights need to be clarified, such as rights to urban land, and others, such as restricting the ownership of land to Armenian citizens, may need to be reconsidered. However, the stage is set for private ownership of immovable property.

The Republic of Armenia has made substantial progress toward privatizing both immovable property and enterprises. Agricultural land now largely is privatized. A new housing privatization law has been enacted, and the privatization program began in September 1993. The government is committed in principle to privatizing urban land, but a plan for resolving competing claims has not been developed.

There is a nascent real estate market. Single-family homes and privatized apartments are traded. This market largely is "unregulated." Not all transactions are registered. Declared prices are a small fraction of actual prices.

The legal and institutional framework for better controlling real estate market activities has not been created. These would include land code revisions, the creation of an urban land cadastre, lower transfer tax rates, capital gains taxation, deductibility of depreciation, and provisions that would ensure that mortgages are backed by sufficient collateral.

### B. PROPOSED PROPERTY TAXES

Two draft property tax laws have been prepared--one dealing with "land" and the other with "property." New legislation dealing with taxing transfers of property is under discussion.

In general, the draft laws are well conceived. Taxes generally are to be proportional to property value, although the proportions differ among classes of property. The rationale for some of the differentials is not readily apparent, such as the favorable treatment of land for dachas and the differentials between rural and urban land used for industrial purposes. Proposed exemptions should be more tightly drawn. Some self-assessment procedures may need to be reconsidered.

The process of drafting legislation is complicated and time-consuming. Communications among affected organizations could be better. There appear to be no high-level "champions" of property tax and cadastral reform legislation in the government of Armenia. Although this is not surprising given the range of problems the country faces, champions will be needed to resolve conflicting priorities and competing organizational interests.

#### C. ADMINISTRATIVE ORGANIZATION

A coherent organizational structure for managing privatization, building cadastres, and property tax administration needs to be developed soon. The structure will involve republican and local government agencies and non-governmental organizations.

The following principles should guide the development of the organizational structure:

- ! Title registration should be decentralized for the convenience of buyers and sellers of property.
- ! Property tax collection should be decentralized for the convenience of taxpayers.
- ! There should be local offices for making inquiries about property tax matters and for filing appeals.



- ! Responsibility for valuation should be assigned in a way that ensures sufficient financial, human, data, and technological resources.
- ! Sufficient resources should be provided for policy development and review and for research and development.
- ! Decentralized functions should be adequately supervised and coordinated.

Based on international experience, several organizational models could work. The suggested model would make the Tax Inspectorate Office chiefly responsible for administration of property taxes. A juridical cadastral service responsible for compiling cadastral maps, assigning cadastral numbers, maintaining ownership registers, and archiving ownership information would be created. The rationale for separating responsibility for the juridical cadastre from the fiscal cadastre is to break the link in peoples' minds between registration of property rights and property taxation.

#### D. DEVELOPMENT OF CADASTRES

Modern cadastral record systems consist of cadastral maps, a cadastral numbering system, and associated land, building, and ownership records. There are two main types of cadastral record systems: juridical cadastres and fiscal cadastres. The juridical cadastre is an archive of information on real property ownership. The fiscal cadastre serves as the basis for taxes on land and buildings. The systems are linked by cadastral maps and the cadastral numbering system. Computer technology makes file integration possible.

An agricultural land cadastre exists in Armenia. There is no counterpart urban land cadastre. Cadastral maps and a cadastral numbering system are lacking. Urban land parcels have not been delineated. Although extensive data exist about buildings in passports and other paper documents, buildings are not linked to specific land parcels. Cadastral control generally is lacking. However, ownerships of buildings and apartments are being registered.

The scope of work to develop cadastral record systems includes:

- ! A "starting" cadastre
  - ! Guidelines for establishing urban parcel boundaries
  - ! Compilation of provisional cadastral maps
  - ! Establishment cadastral numbering system
- ! Property records
  - ! Selection of characteristics to be maintained, development of codes, and the like
  - ! Data collection strategy, input from existing data, tax return, field canvass, or combination
- ! Ownership/taxpayer records
- ! Sales and market data
- ! Manuals and training
- ! Automation plan

The focus of work initially should be on the development of a provisional parcel-based urban land cadastre in lieu of the current "person-based" property ownership records. Both the Yerevan building inventory office and the Armenian Urban Research Institute have developed registration forms providing parcel boundary plans. Where adjoining land users can agree, these plans can be used as the basis for the land cadastre. Suggestions are made for drawing parcel boundaries when conclusive evidence of the boundaries do not exist. The drawing of provisional boundaries should be legally authorized, but boundaries so drawn should not be treated as legally establishing a parcel's boundaries.

The guiding principle is to draw parcel boundaries around (a) every vacant piece of land (such as a park, building site, and the like) and (b) every primary building (such as an apartment block) including the land around auxiliary buildings (such as garages and sheds. A complex of buildings can be on a single parcel. However, it is desirable to avoid having a building straddle two or more parcels.

Parcel boundary lines should be drawn wherever there is an obvious change in land use or occupation, such as between abutting walls of adjoining buildings, fence lines, hedges, and the like. Of course, boundaries will not always be obvious. In such cases, the cadastral administration will have to make its best guess as to the location of the parcel boundary. As a general rule, when the land areas on both sides of the boundary are either both publicly owned or used or are both privately owned or used, the boundary should divide the space equally. When one side is privately owned or used and the other side is publicly owned or used, the boundary should be drawn in a way that favors the public's interest.

The provisional cadastral maps should be open for public review and comment. Interested parties should be allowed to present evidence as to where boundaries should be adjusted, provided other interested do not object. The Armenian Urban Research Institute's recommended temporary land committees would be suitable bodies to hear comments and to attempt to resolve differences. Policies and procedures to guide the committees' deliberations should be developed.

#### E. VALUATION

The need to develop the capacity to value property for tax purposes is widely recognized. The major phases of a modern mass valuation program include market monitoring and analysis, mass valuation model building, model application and review, and communication of the results to taxpayers.

Pilot studies in the first two phases have been begun by the Armenian Urban Research Institute. The Institute has monitored sales activity and obtained sale price data. The Institute has developed "starting prices" of flats and urban land. However, substantial progress in developing an ongoing valuation program cannot be made until the property tax administration is organized.

#### F. TAX ADMINISTRATION

Tax collection and enforcement are strategically the most important components of a property tax system. The property tax is a fiscal instrument designed to provide government revenue. The property tax can also be used to improve economic efficiency and equity. These results can only occur,

however, if the property tax is uniformly and effectively collected. Property tax objectives in law cannot be realized unless revenue is actually received.

Property taxation is not truly "taxation" without strict enforcement. Taxation without enforcement should better be called "contribution." The property tax becomes a system in which only those who want or are forced to will pay (contribute). The property tax will not be based on "ability to pay" but on "ability not to pay." Such a tax usually falls on the poor and politically weak.

The five basic steps of an effective tax collection and enforcement program are:

- 1) Tax liabilities should be assessed.
- 2) Taxpayers should be notified of their tax liabilities.
- 3) Taxpayers should be persuaded that they should pay.
- 4) Tax payments should be received and properly recorded.
- 5) Delinquent taxpayers should be forced to pay their liabilities.

The draft laws make the Tax Inspectorate Office generally responsible for property tax administration. However, substantial progress in developing the administration cannot be made until specialized units are created.

#### G. PUBLIC INFORMATION AND ASSISTANCE

Successful implementation of the new taxes on property will require public acceptance and cooperation. Efforts to secure this acceptance should occur at all levels of the tax administration. Property tax administration should be viewed as a public service function. The chief service is an equitable assessment. The tax administration should demonstrate at every opportunity that the tax is being enforced even-handedly.

Policy makers and tax administrators must communicate effectively their publics--homeowners, business people, and

government officials. The rationale for the tax, how it is administered, and taxpayers' rights and responsibilities must be explained.

Taxpayers should feel welcome in the offices of the property tax administration and be reassured that the tax administration is sincerely interested in their needs. An accessible, effective appeal process is crucial to the success of the property tax. In property taxation, in contrast to other taxes where administrators audit the assessments of taxpayers, taxpayers use the appeal process to audit the work of the tax administration. It is important that access to the appeal process be convenient and inexpensive, at least at the initial stages, with later stages reserved for more complex appraisal and legal problems, where expert assistance may be necessary.

The Armenian Urban Research Institute has recognized the need for education in democratic legal rights and responsibilities. Work on developing public information and assistance programs cannot begin until the organizational structure has been put into place.

#### H. TECHNOLOGY

Modern cadastral record, mass valuation, and property tax administration systems require computer technology. Therefore, Armenian systems should be developed with computerization at least eventually in mind.

Recent technological advances and cost reductions have made computer systems available to the smallest tax agencies. Computer systems help with administration and with valuation--the latter type of system being called a computer-assisted mass appraisal (CAMA) system. Computer-assisted valuation systems can be viewed as having four broad, integrated subsystems: data management, sales processing and analysis, mass valuation, and administration. The data management system supports data storage, maintenance, and retrieval. The sales management system provides for sales processing, analysis, and ratio studies. The valuation system comprises mass valuation applications of the three approaches to value. The administrative system provides for such functions as preparation of valuation and tax rolls, notices, project management, forms generation, and exemption and appeals processing. It also interacts with other systems particularly

tax billing and collection systems. Increasingly, valuation and tax administration systems are being linked to geographic information systems (GIS) and electronic document management systems.

The computer system development process should begin with a determination functional requirements. A strategy for obtaining the software that will effectively meet those requirements should be devised. Finally, hardware alternatives should be evaluated. Hardware should be evaluated on the basis of capacity and reliability, availability of maintenance service, and ease of upgrading. Experienced data processing managers should help make acquisition decisions.

Tax administrators have several broad options in application software selection and development. One is to develop software internally. The second option is to acquire special purpose software from a vendor. Third, offices can build a system from general purpose or "generic" software components to meet their requirements. Of course, a tax administration is not restricted to a single approach. In view of continuing technological advances, generic software is becoming increasingly attractive relative to internal development just as personal computers are becoming attractive as a hardware platform.

The current situation with respect to computer technology in Armenia is mixed. On the negative side, frequent power interruptions create problematic environmental conditions. Unreliable telecommunication systems also constrains some computer applications. In addition, computer hardware available to government bodies seems to be in short supply--limited to a few PCs. These problems can be solved with capital investments. Additional challenges include the need for an appropriate legal framework and, more important, the need for managers who appreciate the value of computer technology to provide leadership toward computerized solutions.

On the positive side, Armenia was a center for computer science during the Soviet era, and the [Computer Research Institute of Yerevan] is still active, although smaller in size. Consequently, there is a pool of computer-literate people. In addition, the work of private firms like the Aragast B Company and institutions like the Scientific Re-

search Center of City Management Systems suggest sufficient potential for computerization.

People in these organizations are abreast of the state-of-the-art in generic software. In addition, skilled system designers and programmers are available to develop software internally.

The Scientific Research Center of City Management Systems is developing PC systems for the building inventory and housing maintenance departments of Yerevan. The center also is developing a personal information system and has a demonstration version of a rudimentary GIS, the "Kaghak" (city) Automated Information System. The Aragast B Company is developing multi-media systems.

#### I. IMPLEMENTATION PLANNING

The implementation of new tax systems will require careful planning. There is little evidence that such planning has begun. Given the desire to implement the proposed property taxes quickly, implementation planning should begin as soon as possible. The plan should address the following:

- ! Establishing Legislation
- ! Marshalling Resources
- ! Designing Systems and Procedures
- ! Training
- ! Data Collection
- ! Valuation
- ! Public Information
- ! Ongoing Administration

Substantial progress has been made only in drafting legislation.

Regarding the general timetable for implementation, an effective date for the proposed property tax legislation has not been set. The Armenian Urban Research Institute believes five-to-six years would be required to implement the urban land cadastre (at a current cost of \$10 million). That

probably is an ambitious timetable, but the State Tax Inspectorate believes the country cannot wait four or more years while the law and systems are being perfected to implement the new taxes. That is the fiscal and political reality. One to two years would be required to implement a minimal, interim system successfully.



## I. BACKGROUND

The Republic of Armenia is creating a multi-faceted new legal and institutional framework designed to legitimate a democratic political system committed to a market economy. This is a challenging prospect, given great cultural differences between the old and new systems developed over decades.

Several supporting systems are the subject of this report. These include the establishment of a greater range of private property rights and a system for recognizing who possesses rights to specific parcels of immovable property. At the same time, programs for transferring immovable property from the state to private parties must be created. In addition, open markets for immovable property must begin to function efficiently. Finally, taxes on property need to be instituted.

This report surveys the status of developments in the above areas in late July and early August 1993. It is based on a two-week technical assistance mission by Richard R. Almy, a specialist in property tax systems, valuation, and cadastres. The purpose of the mission was to assist the International City/County Management Association (ICMA) in its efforts to help the Republic of Armenia improve its housing pursuant to a contract with the United States Agency for International Development (USAID).

During the mission the author attempted to introduce basic concepts and choices with respect to the design of property valuation, property taxation, and property registration and titling systems. He met with officials in the government of the Republic and the City of Yerevan, the capital, and with representatives of institutions and firms with related interests (see annex A). Key concepts and choices were presented in a one-day seminar (see annex B) and are contained in this report together with recommendations.

The author appreciates the difficulties and potential problems of discussing technical subjects like taxation and valuation in a foreign language (English). In hopes of improving communications, I attempt to employ terms adopted by the Organisation for Economic Co-operation and Development and the International Monetary Fund. When I use the term *property tax*, I mean a recurrent (annual) tax levied on owners or users

of immovable property. I use *immovable property* in preference to real property or real estate. Immovable property includes land and "improvements." However, I prefer the terms *buildings, structures, and improvements to the land* in preference to the more general term "improvements." I label taxes levied at the time of transfer; estate, inheritance, and gift taxes; income taxes on imputed rent; and so forth as "other taxes related to property."

## II. PRIVATE PROPERTY RIGHTS AND PRIVATIZATION

My examination of private property rights and privatization was in the context of their relationship to cadastral record systems and property taxation. I attempted not to duplicate the work of Robert Josephs (and others). However, references to Josephs's work seem appropriate.

### A. PROPERTY RIGHTS

#### 1. Concepts

Concepts of property differ between western countries and former communist countries. These differences create semantic difficulties that can affect communications between easterners and westerners.

The concepts of "land" and "property" constitute one area of difference. In former communist countries, "land" connotes agriculture. However, land for which permission to build upon has been granted seems to be viewed as a special kind of asset. "Property" connotes buildings and the fixed assets of enterprises. Urban land almost escapes notice, particularly after it is built upon. Consequently, republics in the former Soviet Union and countries in the former Soviet bloc commonly have separate "land" and "property" taxes.

In the west, "property" may be classified in two broad, overlapping physical ways: as *tangible* or as *intangible* property. Property may also be classified as *real* or as *personal*.

*Real property* is the rights, interests, and benefits connected with *real estate*. Real estate consists of *land*; *improvements to land*, such as clearing and grading; *improvements on or attached to land*, such as buildings; and *appurtenances*, such as easements to cross or give access to land. Except for appurtenances, real estate is tangible.

*Personal property* is defined by exception: that is, any property that is not real is personal. Personal property is characterized by its mobility. Hence, personal property is known as *movables*, and real property is known as *immovables*.

The distinction between movable and immovable property is not always clear. If movable property is exempt from taxation while immovable property is taxable, ambiguity in classification can cause administrative and appraisal problems. One test is whether the item in question can be moved without damage to itself or the real estate to which it is connected. Another less conclusive test is ownership. If the owner of the item is different than the owner of the parcel of real property on which the item is located, the item usually is classified as movable.

Buildings are constructed of items that once were movable. Although no one would argue that the bricks in a wall remain movable property, such items as built-in refrigerators could be classified as either movable or part of the immovable property. If part of the immovable property, they are known as *fixtures*. Attached items used in business, such as display cabinets, are known as *trade fixtures*. These are usually classified as movable property even when their removal may cause some damage to the item or the building. Industrial plant machinery and equipment present even greater definitional problems. Is an oil pipeline or refinery movable or immovable? Such questions are usually answered in legislation.

Land parcels define or identify pieces of real estate. A parcel of land is: a contiguous area described in a single description in a deed or as one of a number of lots in a plat; separately owned, either publicly or privately; and capable of being separately conveyed. Land potentially extends from the center of the earth upward to the periphery of the universe in the form of an inverted pyramid circumscribed by the boundaries of the parcel. It includes natural resources. There are practical limits to claims of subsurface and air space. There may be legal limits as well; for example, commercial airlines legally use the air space above property they do not own.

From a legal perspective, private property rights include the rights to use ("quiet enjoyment"), sell, lease or rent, enter or leave (real property), encumber or give away, and refuse to do any of these. Governments authorize and protect those rights. Governments also reserve to themselves certain property rights associated with police power (protection of the general welfare), taxation, eminent domain (expropriation

for the public good), and escheat (reversion of ownership to the state when a deceased owner has no heir).

Property rights can be divided and shared. This has led to the concept of a *bundle of rights*. Each right is likened to a stick in a bundle. Rights may be *separated* or *divided* in many complex ways. For example, air space, sub-surface space, mineral, water, grazing, hunting, and other rights may be owned separately from the other rights to the same property. At the same time, a right may be either owned by one person or divided among many owners. Partnerships and the common areas of condominiums are examples of divided property rights. Interval ownership ("timeshares") is another type of divided interest in real property. Development rights permitted under land-use controls may be transferred from one property to another.

In summary, property is a cultural concept having to do with the legal relationships among people with regard to things. Without laws, property does not exist.

## 2. Private Property Rights in Armenia

The notion of private property is not completely novel in Armenia. Even during the Soviet era, when land was owned by the state, both individuals and enterprises could acquire rights to use land. In addition, buildings could be owned by users.

Josephs points out that article 9 of the Constitution of September 25, 1991, recognizes the right of individuals to own immovable property. This right makes possible the establishment of markets for immovable property. However, private rights appear to be seriously constrained (also see the discussion of land use controls below). Such constraints can have two undesirable effects. First, they may hamper the development of immovable property markets. Consequently, investment in immovable property will be constrained. Second, they may spawn evasion and corruption, which will undercut citizens' support for their government.

Among the constraints cited by Josephs is article 8 of the Constitution, which reserves property rights to citizens of the republic. Although, the Armenians' historic concern for the protection of their property is understandable, it

would seem that a more pressing need is to put the nation's assets to work building a strong market economy than to guard jealously those assets from foreign ownership.

In addition, Josephs suggests that there are conflicting constitutional provisions. One question that may need to be resolved is whether the prohibition on foreign ownership of immovable property is absolute or whether foreigners can hold a minority interest in property. A related question is how this prohibition would affect the operations of multinational corporations.

Josephs concludes that property rights are neither carefully differentiated nor clearly delineated. This is understandable, given the country's history. The Armenian Urban Research Institute in "About Land Reform in the Cities of the Republic of Armenia" has raised similar concerns regarding the Law about the Property of the Republic of Armenia and the Law about the Land Code of the Republic of Armenia. Attention to such problems will be needed to ensure well functioning immovable property markets, including the establishment of cadastral record systems.

Among the issues to be resolved (and others are discussed below) is whether there is to be a right of *adverse possession*. (Adverse possession has to do with gaining title to property belonging to another [such as the state] through open, hostile, and continuous use for a stipulated period.) There appear to be many unsanctioned uses of land and buildings. Re-registration of all land ownership and land use rights is considered a possibility. A committee has been established in Yerevan to consider such issues.

Armenia also might reconsider existing restrictions on individual movements ("propiska" laws). Such restrictions are not in harmony with basic human freedoms. They have a dampening effect on immovable property markets, and they create an incentive to move illegally.

## B. PRIVATIZATION

Agricultural land and urban housing are being privatized. Privatization in Armenia is simplified by the fact that there is no restitution program. The privatization of state enterprises and urban land has yet to be resolved. These

probably will not be privatized free of charge. A related issue is the allocation of unprivatized property between the central and local governments. Large enterprises generally are regarded as state property and small enterprises are regarded as local.

### 1. Agricultural Land

The privatization of agricultural land largely has been accomplished. Individual parcels of arable land were sold to private entities at official cadastral values. A family could acquire up to three lots. Resales will be allowed after three years (that is, beginning in 1994).

### 2. Urban Land

Apparently the privatization of urban land has been agreed to in principle, but legislation appears not have been drafted yet. The Land Code appears to provide for privatization (a combination of ownership and (long-term and short-term) use rights, but the Armenian Urban Research Institute regards the code as an insufficient framework for full-scale land privatization. Some transitional elements in the code already have lost relevance.

Many difficulties are anticipated in allotting urban land. The basic question is how much land should be allocated to a building? Allotment will be complicated by the facts that there are many auxiliary buildings in courtyards and many apartment blocks are multi-use buildings with legal and illegal shops occupying the ground floor. (My suggestions concerning the delineation of urban land parcels can be found in section V.)

The "starting prices" discussed in the section VI (valuation) are intended to serve as the initial prices of privatized land.

### 3. Housing

Approximately 50 percent of dwellings (mainly rural) already are owned privately according to the International Monetary Fund (1992). An urban housing privatization program began in 1989. Housing units could be purchased at official prices (see discussion of valuation and "starting prices"). A new housing privatization law was approved 9 June 1993 and

went into effect 1 September 1993. Under it, all state-owned housing units are eligible for privatization to their occupants at no charge within a two year period. Afterwards, un-privatized units may be sold at cadastral values. Public support of the housing privatization law was unknown at the time of my mission.

Josephs noted with respect to the recently enacted Law on Housing Privatization that there was little discussion of the attendant privileges and responsibilities. Rights to an apartment seem not well defined. Currently, one person is "responsible" for it, but family members and non-family members residing in the apartment also have rights. Management of blocks containing both state and privately owned apartments also is seen as a problem. These are important points, given the state of the economy and the deterioration of the housing stock.

#### 4. Enterprises

Privatization of state enterprises in the services, trade, and light industry sectors is said to be underway. I did not verify this. As previously mentioned, the privatization of large state enterprises is unresolved. A Board for Privatization and Inventory of State Property has been formed.

#### 5. Administration

a. Agricultural Land: I did not obtain information on the administration of the agricultural land privatization program. The Ministry of Agriculture administers the program, and according to the International Monetary Fund (1992), 80 percent of agricultural land had been privatized. After the three-year moratorium on re-sales expires, transfers can be expected, adding to the general cadastral work load.

b. Housing: Building Inventory Offices administer the privatization of housing. They maintain registers and records of use rights, privatized housing units, and apartment blocks. They issue "licenses" to acquire ownership rights in housing units, which allow the license holder to gain title of the unit. They also have custody of some building passports. The passports and licenses contain information needed for cadastral data systems.



There are 230,000 to 240,000 flats in 6,500 to 8,000 buildings eligible for privatization in Yerevan. (Precise counts do not seem to be readily available.) No information was obtained outside of Yerevan. The Yerevan building inventory office said 200,000 flats had been inventoried, of which 35 percent (70,000) have been privatized.

Under the 1989 program, about 3,000 privatizations were being processed per month in Yerevan by a staff of sixty. (Processing the privatization of a housing unit required one to two months.) At this rate, fifty-three months would be required to process the rest. The new privatization law contemplates a window of two years to privatize housing free-of-charge. Of course, no one knows how many occupants will elect to take on the rights and obligations of owning their own homes, given the deterioration of some buildings. However, there is a strong possibility that a log jam of privatizations will develop. The information system being developed by the Scientific Research Center for City Management Systems will help. It might also be possible to streamline field work.

C. MARKET ACTIVITY AND THE DEVELOPMENT OF A REAL ESTATE INDUSTRY

In addition to transfers of privately owned property, use rights appear marketable. A real estate market exists and is felt to be functioning. For a description of real estate market activity, see Najarian. The depressed economy is said to be adversely affecting the volume of transfers and prices.

There are about twenty registered brokers and traders. Many sales are completed without their services. There is an open air weekly real estate market. There is some advertising in newspapers and on television. Asking prices are seldom advertised now.

Considerable market activity is characterized as "illegal." I interpret this to mean that the transfer was either without a license or unregistered. From a western perspective, buyers who fail to register their ownership are assuming enormous risks. Without registration, the government cannot protect the owner. The seller could sell the property a second time.

There is an interest in "controlling" markets, although what is meant is not quite clear (the same sentiment exists in eastern European countries).

The Armenian Urban Research Institute has attempted to monitor prices and has had some success in gaining access to brokers' data by exchanging information with them. The scruples of brokers and traders are in question. Apparently there is little sharing of data among brokers now. Data sharing would foster open and more efficient markets. Buyers and sellers would benefit. At the same time, it will be necessary to guard against the immovable property industry gaining an information monopoly, as has happened in parts of the United States.

Access to information from immovable-property markets is required if the administration of taxes on immovable property are to succeed. Access to market information can be gained in various ways. A law mandating disclosure of information to tax administrators about terms and sales prices is very important. This information can be collected when a buyer applies for a certificate of title (the real estate transfer tax could be imposed at the same time). The tax administration also should tap into industry information sources by establishing and maintaining contacts with real estate agents and brokers, private valuers, and other immovable property advisors. Such sources can provide information about the circumstances of sales--information that is important to understanding markets and to determining whether sales meet the criteria of open-market, arm's-length sales.

As is discussed elsewhere, it will be necessary for the government of Armenia to develop an integrated set of measures to encourage registration and accurate price declarations. These will include low transfer tax rates, reasonable property tax rates, taxation of capital gains, regulation of mortgage lending (only to registered owners), and the like.

#### D. LAND USE CONTROLS

Land use controls will affect privatization and market activity. These effects will need to be considered in valuation.

According to the Land Code, land is divided into the following seven classes:

- 1) Land of agricultural importance;
- 2) Lands of populated areas (towns, settlements, villages);
- 3) Lands of industry, transportation, communications, defense, and other importance;
- 4) Lands of natural protection, health, resort, sports, and historic-cultural importance;
- 5) Lands of forest stock;
- 6) Lands of water supply; and
- 7) Lands of preservation.

The significant feature of these classes is the lumping together of all urban land into one class. Changes in the classification of land can only be made by the government. Annexation of agricultural land by municipalities appears to be an alien concept. The Land Code does provide for expropriation with compensation.

Because urban development projects were done by state enterprises, the land use controls (such as zoning and building codes) needed to regulate private development projects appear not to exist. However, there are master plans for each community. The general development process is to apply to use a "parcel," submit a construction plan and timetable to the city's capital construction department, and, if approval to proceed is obtained, begin construction. In theory, if construction does not go according to plan (and much construction has not), the city can order the owner to destroy the incomplete building and can regain control of the land. Legal buildings presumably were, and are, built according to state standards (although quality control may be lacking).

### III. PROPOSED PROPERTY TAXES

#### A. INTRODUCTION

The Republic of Armenia is creating a multi-faceted legal framework to bring about a market economy and democratic government. Legislation pertaining to the taxation of property is part of that framework.

The legal framework, or body of laws that govern a tax, is a key element of a property tax system. It lays out policy choices, provides the environment for their achievement, and assigns responsibilities. Among the environmental matters the legal framework should cover are resources and technology, data, public involvement, and interagency and intergovernmental relations.

##### 1. Underlying Principles

A key principle of taxation is uniformity. A policy of uniformity builds popular support for government. Uniformity is achieved when taxpayers are treated even-handedly, valuations are accurate, and collection rates are high. A policy of uniformity can have a fiscal benefit. The overvalued object loudest to high taxes, causing governments to limit tax rates, resulting in the undervalued paying less taxes than they would be willing to tolerate. Consequently, total property tax revenues will be less than would be the case with a uniform tax.

In addition, a policy of uniformity also makes good economic sense. Taxes can influence economic behavior. Behaviors that distort economic decisions, which are essential to orderly markets, or are contrary to other societal goals are to be discouraged. Taxes that are "neutral" encourage "efficiency." A "neutral" tax is one that does not distort economic decisions. Broad-based, proportional taxes tend to be neutral taxes. Taxes that inspire widespread avoidance (legal activities designed to reduce taxes) and evasion (illegal activities designed to reduce taxes) are not neutral.

Against these standards, current market value is the best basis for a property tax in a market economy. Revenue needs change annually. So do property values. Some properties in-

crease in value while others decline. A uniform relationship between property value and property taxes can be maintained only if current market value is the basis of assessments. For most taxpayers, current market value also is a reasonable measure of ability to pay and of benefits received.

Market value can be defined as "the most probable price which a property should bring in a competitive and open market under all conditions requisite to a fair sale, the buyer and seller each acting prudently and knowledgeably, and assuming the price is not affected by undue stimulus." Prices established in such "open-market, arm's-length" transactions provide good evidence of market values. Although sales are historical facts, market value essentially is a matter of informed opinion. A major responsibility of the property tax administration is to analyze actual prices and form conclusions about the value of all taxable property whether it has sold recently or not.

The local nature of the property tax can help consumers make economically efficient choices about the mix of governmental services. Because demands for goods and services vary among individuals and communities, local governments can tailor their services to match consumers' desires, and use local taxes and revenues as quasi-prices for those services. For taxes to be used effectively as a pricing or rationing mechanism, they must be benefit taxes: taxes whose incidence corresponds to the distribution of the benefits the taxes provide. No tax performs this role perfectly, but, at the local level, a property tax is more effective than the alternatives.

Linking taxes with the provision of services promotes accountability. Accountability is achieved when the level and mix of government spending and the distribution of its costs are decided in a climate of full disclosure by the elected representatives of a jurisdiction.

"Openness" is an essential characteristic of a politically acceptable property tax. To satisfy the criterion of openness, the tax administration must provide taxpayers the information they need to judge the fairness of their assessments. Taxpayers must receive notice of assessments and be afforded simple, informal appeal procedures. Taxpayers need to understand the property tax system, how their property

was valued, and how their valuation compares to the valuations of similar properties.

The property tax should be kept as simple as possible, consistent with other goals. A simple tax is more readily understood and accepted. Costs of administration and compliance are lower.

The property tax must have legitimacy. That is, legal authority for the tax and its administration must exist. Legal standards must be enforceable, and the tax administration must enforce the standards.

The cost of administering the property tax should be as low as possible. After start up, costs should be no greater than 5 percent of revenue. Taxpayers' costs of compliance also should be kept as low as possible. Appropriate use of technology can help achieve the highest possible degree of valuation accuracy and administrative efficiency.

## 2. System Overview

A property tax system is part of a nation's governmental structure. The basic purpose of that structure is to respond to societal needs and wants. These include a successful transition to a market economy.

A property tax system can be thought of as being made up of components and elements. The elements include policies (as reflected in laws and customs), procedures, data, technology, and people. The components include an administrative component and three functional components: levy, assessment, and collection. The administrative component controls the others. The levy component determines the amount to be raised from the property tax. The assessment component allocates the levy among taxpayers. The collection component extends taxes, enforces collection, receives tax payments, accounts for them, and places tax receipts in the appropriate treasury. Moving from a "system" to a "process" perspective introduces the element of time.

An assessment system also has components or phases, including original assessment and appeal. In a tax on capital value, valuation is the most important aspect of the original assessment phase.

### 3. The Legislative Process in Armenia

Tax legislation apparently originates in the Tax Inspectorate Office (see section IV). Institutions like the Armenian Urban Research Institute can have a voice. Drafts are sent to the government. Comments and consent of ministries are sought. Eventually drafts make their way to the executive council, the parliament, and the president. Long delays in passing crucial laws have occurred according to the International Monetary Fund (1992). Thereafter implementing decrees and decisions are made.

Apparently there is little formal multi-agency discussion of draft legislation. Communications appear bilateral. Consequently, misunderstandings about the status of legislation can happen, and bureaucratic concerns may not be adequately addressed. Ministry officials may resent officials in government departments. There appear to be no high-level "champions" of property tax and cadastral reform legislation in Armenia, a not surprising problem given the range of problems the country faces.

### 4. Status of Proposed Property Tax Legislation

The Republic of Armenia contemplates a number of property-related taxes. These include two annually recurring taxes: a "land tax" and a "property tax." Laws governing these taxes have been drafted. Non-recurrent taxes include a transfer tax and inheritance and gift taxes. I do not believe draft laws exist for these taxes.

I reviewed the draft Law of the Republic of Armenia about Land Tax and the draft Law of the Republic of Armenia about Property Tax with Messrs. Andreasian, Anlian, and Chilignarian. My comments and recommendations are presented in italics. Section B contains my comments and recommendations concerning the draft law about the land tax. Section C contains my comments and recommendations concerning the draft law about the property tax. Section D deals with transfer taxes.

*I did not note any inconsistencies in the land and property tax laws. However, coverage is uneven. As one law is amended, the other law should be reviewed. I suggested that matters would be simplified if the two laws were combined into one. This suggestion was not*

*regarded as practical at the present time, given uncertainties about the privatization of land. However, consideration should be given to unifying the two laws in the future. The tax system would be simpler, and the taxes would be easier to understand and administer. As with other property tax laws in the former Soviet bloc, the drafts exhibit an admirable economy of language-- sometimes to a fault.*

B. LAW OF REPUBLIC OF ARMENIA ABOUT LAND TAX

*The draft law about the land tax that I reviewed superseded the draft that had been translated into English so article numbers and my interpretations of the meaning of the act may not be correct. An asterisk (\*) in the left margin signals a need for further clarification.*

1. Chapter 1. Object of Taxation and Payers

a. Article 1: Taxpayers are the owners of land, except for state land, in which case the users of the land are the taxpayers.

*Designating the owner as taxpayer simplifies administration. The liability for the tax also should be specified. I recommend liability on the property (in rem liability) in preference to liability on the person (in personam liability). Under the in rem concept, a lien is attached to the thing taxed in the event taxes are not paid in a timely fashion. Ultimately, the tax administration can take title to the property in order to satisfy accumulated tax liens. In rem enforcement tends to be more efficient than in personam enforcement.*

b. Article 2: Agricultural land is to be valued for tax purposes on the basis of a standardized net income from agriculture assuming the soil is used to its maximum capacity. The Ministry of Agriculture is to figure the standard incomes. Soil classes will be displayed in the agricultural land cadastre.

*See comments on article 4, below. Article 2 and article 4 could be combined to simplify the law.*



2. Chapter 2. Basis of Tax and Tax Rates

a. Article 3: This article provides for assessment on the basis of cadastral values, which implicitly are to be current market values and which are based on a "highest and best use" concept, not the actual use of each plot. Values are to be expressed on a per-unit basis.

*Market value assessment is consistent with market economy principles and good administrative practice. Provided that revaluations are frequent, the tax base is more buoyant than specific taxes (such as those based on land and building area). Expressing values on a per-unit of area basis also conforms to accepted administrative practice.*

*Estonia is another country in the former Soviet bloc to adopt a market value-based property tax straightaway using a "starting value" concept. Bulgaria may follow.*

b. Article 4: Agricultural land is to be taxed at 20 percent of its cadastral value (which is an annual value--that is, the net profit that could be obtained by taking full advantage of the productive capacity of the soil.)

*In many nations agricultural land is taxed on the basis of its agricultural productivity value instead of its market value, which would be considerably higher when a more intensive use was contemplated. It is unusual to combine both annual and capital values in a property tax system, as Armenia proposes to do. Consequently, consideration might be given to expressing agricultural use-value in capital terms to make comparisons between agricultural and urban property easier. However, the present proposal seems reasonable during the current high inflation. (It might be noted that the United Kingdom has taxed housing on an annual basis while taxing business property on a capital basis, and while not taxing agricultural land at all!)*

c. Article 5: Certain land allotted for gardening and dachas is to be taxed at 10 percent of its annual cadastral value at the time of allocation.

\* *I need further clarification of this article. It is my understanding that land allotted for gardens and dachas generally is poorly suited for agriculture but may possess amenity value. Why such land should be taxed at a low rate (10 percent) of frozen agricultural use values is unclear. A better basis would be its capital value, perhaps at rates comparable to urban land.*

\* *My questions include the implications of the references to Local Councils and the phrase "not subject to use."*

d. Article 6: All urban land is to be taxed at 0.4 percent of its cadastral value. Cadastral values are to be capital values, which are to reflect market values as closely as possible.

*Including urban land in the property tax base is highly desirable. Basing the tax on market capital values also is highly desirable, although the market value standard might be stated more explicitly.*

e. Article 7: Industrial land not in urban areas is to be taxed at 0.1 percent of its cadastral value. Such land includes land used in mining transportation, communications including broadcasting and television, gas pipe lines, defense, and irrigation.

*Although probably intended to encourage industrial development in rural areas, this article will discourage continued use of urban land for industrial purposes, because urban land is taxed four times as heavily. The policy reasons for this magnitude of tax discrimination should be reviewed. Increased industrialization of rural areas might imply loss of valuable farm land and increased expenditure for transport and other infrastructure.*

\* f. Article 8: This article deals with forest land but I do not have a clear understanding of it.

g. Article 9: The liability for the land tax begins the month following the month in which the right to own or use the land was given.

*Presumably, the purpose of this article is to get property on the tax rolls quickly and to start the flow of tax revenues. According to Chilingarian, the draft bill uses the less precise term "realized," which could result in taxpayers' attempting to delay tax liability. The law should make clear that the liability begins when the land was privatized or the right to use land was given.*

*Here and elsewhere, consideration should be given to specifying a valuation or status date (see article 17). A specific valuation date would clarify valuation and improve tax equity, especially during periods of high inflation. Also see article 15.*

h. Article 10: Exemptions ("privileged rights") take effect the first of the month in which they are granted. In the case of the loss of a privileged right, tax liability begins the month following the loss of the right.

*Thought might be given to establishing an annual tax calendar that specifies the deadline for applying for an exemption (or for renewing an exemption) each year. All exemptions might take effect on the first of the year. This would simplify tax accounting but may imply a period during which work on exemptions reached a peak.*

### 3. Chapter 3. Land Tax Exemptions (Privileges)

*There is a general doctrine in the west that exemptions should be "strictly construed" (that is, not liberally granted).*

\* a. Article 11: Article 11 exempts land owned or used by the following types of property:

- a) All organizations financed from the state budget;
- b) Specific (listed) cultural, educational, and public health institutions;
- c) Reserves, national parks, botanical gardens, and land of historic-cultural importance;
- d) Peasant farms and collective farms for two years;

- e) Specific lands along the borders of the Republic of Armenia--presumably the former military buffer zones;
- f) Those owners/users of land who have been allotted non-usable lands (non-reclaimed, withheld from agricultural circulation [use?] for five years; and
- g) Common-use lands (streets, squares, parks, and the like).

*It is important to grant exemptions only to lands used for exempt purposes by the exempt organizations.*

b. Article 12: Article 12 exempts 50 percent of the value of the land used exclusively for the following:

- a) State agricultural and timber industry scientific organizations, experimental test grounds, state educational or research organizations, and seed growing and variety experiment stations; and

*It is important to grant exemptions only to lands used for exempt purposes by the exempt organizations.*

\* b) Citizens who are exempt from the income tax.

\* c. Article 13: The Government of the Republic of Armenia with the approval of the Permanent Commission on Financial-Loan and Budget Issues of the Supreme Council may exempt individual taxpayers and groups of taxpayers.

*This article may be problematic in the light of doctrine of strict application of exemptions. If this is intended to allow compassionate exemptions for poor property owners, it would be possible to devise explicit solutions.*

#### 4. Chapter 4. Tax Administration

\* a. Article 14. Land tax calculations are to be based on documents pertaining to ownership or the right to use property.

*As will be discussed in section V, a geographically organized land cadastre should be developed. These documents, together with large-scale cadastral maps, would serve as the initial basis of the cadastre.*

b. Article 15: Enterprises, institutions, and organizations (regardless of their type) are responsible for calculating their land taxes and filing their tax returns with the tax administration by 1 August. Tax returns on newly acquired land are to be filed within one month of allotment.

*The use of self-assessment in property tax administration has been problematic. Its advantages include the collection of a great deal of data in a very short time at low cost to the tax administration. Problems include non-filers and under-reporting, with attendant concerns about the equity of the resulting tax. Somewhat greater success has been achieved with asking taxpayers to verify data than with asking them to value their own properties.*

*Self-assessment by long-established state enterprises accustomed to submitting tax returns and the like may prove satisfactory. However, newly created private enterprises will not be so trustworthy. The tax administration should calculate land taxes based on information in the returns and on information from other sources. As noted in section V, tax return information should be used to compile a geographically organized cadastre.*

*Although consistent with article 9, the provision for filing a return on newly acquired land the month after receipt may prove confusing and will complicate tax administration. A better approach might be to require the allotment authority to notify the tax administration of the change in land ownership or use.*

\* c. Article 16: The tax administration is to assess the taxes of citizens (physical persons?) and peasant farms and send a tax bill (notice) by 1 August.

d. Article 17: The State Tax Inspectorate is to register taxpayers and calculate taxes on the basis of the situation on 1 June each year. The inspectorate is to establish control over timely payment of taxes.

*A comprehensive parcel-based land cadastre should be established. There is discussion of making local governments wholly or partially responsible of administering the land tax, an idea that may be practical for the City of Yerevan but would not be practical in small cities and sparsely populated regions.*

\* e. Article 18: Article 18 establishes the dates on which taxes are due. Citizens with dachas are to pay taxes in equal installments by 15 September and 15 November of each year. Peasant farms are to pay taxes in equal installments by 15 November of the current year and 15 April of the next. Enterprises are to pay taxes quarterly not later than the t of the month following the end of a quarter.

f. Article 19: The Republic of Armenia is to receive the revenue from the land tax.

*Some with whom I talked said "the proposal" was to share revenue with local governments. Consideration should be given to this.*

#### 5. Chapter 5. Other Provisions

\* a. Article 20: Taxpayers who fail to pay taxes are subject to existing law.

\* b. Article 21: Procedures for implementing the land tax are the responsibility of the State Tax Inspectorate with concurrence of the Ministries of Finance, Economy, Justice, and Agriculture.

*The organization and coordination of tax administration needs to be further clarified (see section IV). The State Tax Inspectorate also should be made responsible for the "property tax" reviewed in section III C.*

#### C. LAW OF REPUBLIC OF ARMENIA ABOUT PROPERTY TAX

The draft Law of the Republic of Armenia about Property Tax was reviewed with Messrs. Chilingarian and Andreasian. My specific observations and questions concerning the draft law about the property tax follow.

1. Chapter 1. Property Subject to Tax and Definition of the Taxpayer

a. Article 1: The intent of article 1 is to make owners liable for the property tax.

*I believe this choice is superior to making users or occupants liable for the tax. It will provide an incentive to use property or sell it to someone who will. This will strengthen real estate markets and foster a more efficient allocation of capital.*

*In discussions of the proposed tax, two questions emerged: First, is liability for tax adequately covered? As discussed above, I mentioned in rem and in personam systems. Although either basis is appropriate in an owner-liable system, I believe an in rem system is more efficient.*

*Second, does the law adequately cover property used by enterprises? At issue is the fact that physical persons who own enterprises may be hard to trace, particularly in the case of corporations. The suggested solution was to treat the enterprise as analogous to the owner. If a change is made to article 1, article 2 may need to be changed.*

b. Article 2: Article 2 establishes three broad classes of taxable property:

a) Material objects required to be listed in the asset accounts of enterprises.

*The Law about the Activity of Enterprises and Owners, which I did not review, is said to contain information about the buildings and movable property that would be included in the list. It would be better to specify the classes of movable property objects that are taxable in this law.*

*The International Monetary Fund (1992), in a discussion of a fixed assets tax, suggested that taxable property might include machinery, tools, transport, and other equipment. (The fixed assets tax is imposed on the*

"balance" of the asset funds, which are increased by the cost of new equipment and indexation for inflation and are decreased by amortization.)

- b) Certain residential buildings, garages, outbuildings, and air- and watercraft owned by physical persons.

Only buildings, aircraft, and watercraft whose value exceeds 850 times the established minimum monthly salary (currently about 4,200 rubles) would be taxable, and only the amount in excess of the threshold would be taxable. (The current threshold is about 3,570,000 rubles [or about \$3,570].)

This provision addresses the problems of tax regressivity and may simplify administration. It may encourage some to build clusters of small buildings to escape or reduce taxes.

- c) Material objects (presumably the same types as in section [a]) owned by physical persons used by enterprises.

This provision is designed to close a potential loophole in this classification scheme. However, discovery of the property may be difficult. A partial solution would be to require the user to indicate such property in his tax return. A field audit would be required to ensure that all such property was taxed.

It might be noted that except for Japan, the United States, and a few other countries, it is unusual for business movable property to be taxed. Including movable property in the tax base has the advantage of including taxing more forms of wealth. The administrative costs of taxing movable property generally are higher than taxing only immovable property.

## 2. Chapter 2. Basis of Taxation and Tax Rates

- a. Article 3: Article 3 addresses methods of assessment and tax rates. Article 3(a) pertains to property listed on the balance sheets of enterprises. The basis of



assessment is the average of values listed at the beginning and end of the year to account for changes in stocks and for inflation (assuming that values are indexed). Specific tax rates are to be decided by the government.

*As mentioned previously, specifying the classes of movable property subject to taxation would be preferable.*

Article 3(b) pertains to property of physical persons as defined in article 2(b). Structures are to be taxed at a rate of 0.2 percent of their taxable value. Aircraft and watercraft are taxed on the basis of horsepower (or in the alternative kilowatts of power). Tax rates are percentages of the minimum monthly wage. The tax rate per horsepower (kilowatt) for aircraft is 3 percent (4.08 percent). In other words, the tax on an airplane with a 1,000 horsepower engine currently would be about 126,000 rubles. The corresponding rate for watercraft is 1.5 percent (2.04 percent). Material objects are to be taxed at the same rate as objects owned by enterprises.

*This scheme of taxing air- and watercraft is curiously complex. Presumably, any craft that met the valuation test in article 2(b) would be fully taxable on the basis of its power.*

### 3. Chapter 3. Determination of Tax Due and Dates of Payment

a. Article 4: Article 4 specifies responsibilities for assessing property and calculating taxes due. It also addresses related matters.

Enterprises are responsible for making quarterly estimates of the taxes due and paying the amount due within five days of the date for submitting quarterly balance sheets. Tax offices assess the property of individuals and send tax bills to taxpayers by 1 August. Taxes are due in equal installments by 15 September and 15 November.

*The tax administration will need an audit staff. It would seem possible to organize the work of the tax offices so that they could complete the assessments of the property of physical persons sooner and issue tax*

*bills sooner, so that tax payments could be spread out more.*

Persons eligible for an exemption (see chapter 4) must apply to tax offices.

If a building is owned by more than one individual, each individual is responsible for paying her or his share of the tax.

*This provision may prove problematic. It will require in personam enforcement and will require that each individual's share be registered. Will each individual receive a separate tax bill?*

If an airplane or boat is owned by more than one individual, the person to whom the craft is registered is responsible for the tax.

*This approach makes more administrative sense than the approach for buildings with more than one owner.*

Newly constructed buildings and aircraft and watercraft purchased new become taxable the year following the completion of construction or the year of purchase.

*This may provide an incentive to complete buildings or purchase air- and watercraft early in a year but should simplify tax accounting.*

Inherited buildings become taxable to the new owner at the moment of inheritance.

Destroyed property or completely non-functional property becomes nontaxable the month following the destruction or event making the property non-functional.

*Regulations concerning this provision, particularly with respect to air- and watercraft will need to be tightly drawn to prevent the owner from doing something as simple as disconnecting a battery to render a craft non-functional and therefore non-taxable.*

When taxable property is transferred during a year, the former owner is responsible for the tax from 1 January to the

first of the month of the transfer. The new owner is responsible for the balance of the tax.

*To simplify the work of the tax administration in the United States, the owner on the valuation date legally is responsible for the taxes for the entire year. However, it is common for the buyer and seller in the sale agreement to apportion any taxes due according to the fraction of the year each party is the owner.*

Persons and organizations possessing information relevant to property tax administration are required to submit that information to the tax administration.

*This is an important administrative provision.*

#### 4. Chapter 4. Property Tax Privileges

a. Article 5: Article 5 contains an extensive list of property tax exemptions.

*As before, exemptions should be "strictly construed" (that is, not liberally granted). My general recommendation would be to review the list carefully, eliminating some categories if possible, making the criteria for eligibility more restrictive if possible, and making some exemptions temporary if possible. An extensive list of exemptions will result in requests for additional exemptions, which may be difficult to refuse politically. The greater the amount of exemptions, the greater the tax burdens on the remaining taxpayer or the lesser the revenues from the property tax.*

*It should be made clear that the exemption applies only to property used for exempt purposes. I would not recommend exempting the property of agricultural industries. I would recommend that the exemption for sport apply only to non-profit organizations.*

*The exemption of environmental and fire protection equipment will be difficult to administer, because much industrial equipment serves more than one purpose. The exemption might be restricted only to equipment that the*

*government requires, and the exemption might be made temporary (say, for five or ten years).*

*The provisions on pertaining to deductions to be made in the value of enterprise property are problematic. The enterprise's apportionment of taxable and nontaxable balance sheet values may be difficult to verify.*

*Regarding the exemptions for physical persons, I would suggest that all exemptions apply only to their houses. I also would suggest that exemptions be granted only to handicapped persons, veterans, and pensioners who have financial need. I do not understand why professional soldiers (officers) and their families should be given exemptions.*

#### D. TRANSFER, INHERITANCE, AND GIFT TAXES

Transfer, inheritance, and gift taxes were discussed with Mr. Andreasian. A transfer tax law apparently has not been drafted yet. However, there appears to be a "notarial" fee of 10 percent now paid on the declared price. A central issue in the discussion was the accuracy of declared values. The valuation of gifts and inheritances also was seen to be problematic.

Some (Mr. Hovhannissian, for example) see the transfer tax as a vehicle for recapturing some of the value of apartments that were privatized at below market prices or at no charge to the new owner.

*The base of a transfer tax usually is either the price of the property that was transferred or the price minus any outstanding debt on the property that was transferred at the same time. (Mortgages may be subject to a separate tax.)*

*Transfer taxes have several purposes: to raise revenue (often only to pay for maintaining the land record system, which benefits land owners through governmental protection of private property rights), to slow the accumulation of wealth, and to provide information about the value of property transferred. Rates sufficiently high to slow the accumulation of wealth encourage*

concealment of property transfers and misstatement of the value of the property transferred. Consequently, rates no higher than 1 or 2 percent of the price are recommended.

Efficient administration of a transfer tax requires the parties to a transfer to disclose the price and terms of the sale. Affidavits often are used for this purpose.

The transfer tax should be paid at the time of the recording of the deed or as a condition for obtaining a certificate of title. As under the current system, the notary could collect the tax. Alternatively, a local cadastral office could collect the tax.

There should be penalties for false or incomplete returns. Third parties such as attorneys, brokers, and notaries should be subject to sanctions for filing false returns. Prominent, egregious falsifications should be the primary targets of enforcement actions. Enforcement should be well publicized. Banking regulations should not allow mortgage loans greater than a specified fraction of the value of the property and should allow mortgage loans only to be made when the value of the property given as collateral is well documented.

There may be a need to counter arguments that the price at which a property is sold is a private matter. Among the valid public policy reasons for requiring the disclosure of real estate sales data is the fact that those data are essential in the administration of a market-value-based tax on immovable property. The data are valuable in income tax administration when capital gains are taxed, when depreciation is deductible, and when imputed rent is taxable. Importantly, the first of these income tax provisions provides an incentive for the buyer to declare a high price. The data also are useful to rational territorial planning. Arguably, making sales data publicly available will lead to more efficient real estate markets. Looked at another way, there is no apparent public policy purpose that is served by giving real estate brokers and agents an information monopoly,

*such as has happened in some parts of the United States of America.*

Purchase of properties by the government at the declared price was discussed as an enforcement technique.

*This appealing idea has not worked well in practice. A large revolving fund would be needed to purchase undervalued properties, because immovable property is an illiquid asset. There are questions of equity and collusion.*

E. OTHER MATTERS

1. Tax Incentives

Tax incentives are an area of interest to Mr. Andreasian. Property tax incentives usually take the form of a temporary exemption of the increase in value, or construction expenditures, associated with a socially or economically desirable activity. Common areas for incentives include renovating buildings, low-cost housing, new commercial and industrial facilities, historic preservation, and pollution control. Incentive exemptions should be granted only after review of an application.

A major area of concern in Armenia is the completion of unfinished buildings. We discussed the pros and cons of western practices: assessment of buildings only when complete (when an occupancy permit was issued) versus assessments based on a schedule of the percentage completed. Of course, an unfinished structure may have no market value or only scrap value minus demolition costs. For example, the general aversion to high-rise panel block buildings may make it uneconomic to finish them all.

2. Related Laws

Related legislation includes:

- ! "Law About Property in the Republic of Armenia"
- ! "Law About the Activity of Enterprises and Owners"
- ! "Law About Taxes and Duties of the Republic of Armenia"

It would be useful to review English translations of these.

#### IV. ADMINISTRATIVE ORGANIZATION

Central government, local government, institutions, and other entities may play a role in land reform, privatization, cadastral system development, and property tax administration. This section identifies some of the "players," identifies some the institutional issues that need to be resolved, and offers some suggestions.

##### A. CURRENT CENTRAL GOVERNMENT ORGANIZATION

This section identifies ministries and other republican agencies involved in privatization, establishing cadastres, or property taxation. The descriptions draw upon S. Anlian's chart of the general organization of the government of the Republic of Armenia and the International Monetary Fund (1992, annex 3). In addition to the organizations discussed below, other organizations may have a role to play. These include the Board for Privatization and Inventory of State Property (which is said not to be functioning yet), architects' offices, the State Department of Architecture and Urban Development (possible sources of project maps and building plans), and the building authority (*Gostroi?*).

! The Government. The Government proposes legislation to parliament and issues decrees to implement legislation adopted by parliament. Its organization is complex. The prime minister, the vice prime minister, seven state ministers, four of twenty-five line ministers, and the mayor of the City of Yerevan constitute an executive council or *Karavarutyun Nakhagayutyun*. The executive council together with the remaining line ministers constitute the council of ministers or *Karavarutyun*. A government apparatus or *Karavarutyun Apparatus* with eight departments reports to the executive minister, who has a direct line of communication with the vice prime minister and the prime minister. The Government Department of the Economy is a counterpart of the Ministry of Economy in areas of policy. The Armenian Urban Research Institute sees a role for a government Department of Architecture, which does not appear on Anlian's chart.

! Ministry of Agriculture. The Ministry of Agriculture maintains the agricultural land cadastre.



- ! Ministry of Economy. This line ministry (and member of the executive council) is responsible for overall macroeconomic policy.
- ! Ministry of Finance. This line ministry (and member of the executive council) is responsible for budget preparation, implementation, modification, and control. The Ministry has three directorates, one of which is responsible for local authority budgets, among other things.
- ! Tax Inspectorate Office. This line ministry-level office is responsible for tax administration. The Office was created in 1991 (it was previously a component of the Ministry of Finance). It has a minister and four vice ministers, who are responsible for four directorates (price inspection, investigation, tax inspection, and analysis and methodological issues). The inspection directorate has five departments: state enterprises, nonstate enterprises, citizen inspection, other incomes, and coordination. The analytic directorate has three departments: information (which deals with tax declarations, enterprise balances, taxpayer information, and international comparisons), analysis (identifying non-payers, auditing, and legal advice), and a department in charge of proposing tax laws and promulgating regulations. The Tax Inspectorate Office also is responsible for tax collection. There are fifty-nine branch offices.
- ! Notaries. Notaries currently are officials in the Justice ministry. They review property transfers for legal sufficiency. They may perform a brokerage function in addition to their official duties.

#### B. LOCAL GOVERNMENT ORGANIZATION

According to the International Monetary Fund (1992, annex 3), subnational government comprises sixty-seven *rayons* or local districts, of which eight are in Yerevan, with an additional *rayon* responsible for Yerevan in totality. Clearly, Yerevan is a special case in Armenia. It has the bulk of universities and institutes and is an industrial center.

Of the remaining fifty-eight *rayons*, twenty one have the title of city-state, while the remaining thirty-seven are responsible for regional administration. Some 700 small villages have their own municipal budgets.

Local agencies that may have a role in privatization, establishment of cadastres, or property taxation include:

- ! Architects. This official maintains a city's master plan. They may compile maps. The Armenian Urban Research Institute visualizes the architecture departments as being responsible of valuation.
- ! Building Inventory Offices. These offices maintain registers and records of privatized buildings and apartments (licenses). They also have custody of some building passports.
- ! Housing Maintenance Departments. These departments have custody of the passports of buildings that need repairs.
- ! Capital Construction Departments. These departments currently are responsible for new construction. Consequently they would have copies of building plans.
- ! Social/Economic Departments. These departments are responsible for local policies and programs related to social and economic development, including privatization.

#### C. OTHER INSTITUTIONS

Other institutions involved in market and government reforms include:

- ! Armenian Urban Research Institute. The institute has had an instrumental role in housing market analysis and in planning cadastral record systems. It visualizes an ongoing research, technical assistance, and training role for itself in the area of computer technology.
- ! Scientific Research Center of City Management Systems. This institute is developing PC software for use by building inventory offices and housing maintenance

departments. It also has developed a rudimentary geographic information system (GIS).

! Megalian (spelling?) Institute. This is a prestigious computer science research institute. The Aragast B Company has contracted with the Institute to develop software. The Institute might be of use in the development of cadastral, valuation, and tax administration systems.

! Cartographic Institute. This institute is said to be responsible for compiling base maps. I did not meet a representative of the institute, so this information is unconfirmed.

#### D. ORGANIZING THE CADASTRES AND THE PROPERTY TAX ADMINISTRATION

The Government of Armenia will need soon to decide which tiers of government and which agencies will be responsible for cadastral record systems and for property tax administration.

The following principles should guide the development of the organizational structure:

! Title registration should be decentralized for the convenience of buyers and sellers of property.

! Property tax collection should be decentralized for the convenience of taxpayers.

! There should be local offices for making inquiries about property tax matters and for filing appeals.

! Responsibility for valuation should be assigned in a way that ensures sufficient financial, human, data, and technological resources.

! Sufficient resources should be provided for policy development and review and for research and development.

! Decentralized functions should be adequately supervised and coordinated.

Intergovernmental relations is another major issue. Aspects of this issue include the role of regional governments

and the responsibility that will be given to local authorities.

International experience with cadastral record and property tax systems suggests (a) many organizational models can be made to work satisfactorily and (b) that none is superior in all respects. Based on this experience, the following suggestions appear worthy of consideration by Armenia.

- ! The Tax Inspectorate Office should be responsible for maintaining the fiscal cadastre, urban land and building valuation, providing information about property taxation, hearing administrative appeals, and property tax collection.
  
- ! The Ministry of Agriculture should be responsible for compiling soil maps, for developing agricultural land values (annual or capital), and for supplying the Tax Inspectorate Office with copies of maps and value information, so that the Office may administer the agricultural land tax.
  
- ! A juridical cadastral service should be created. It would be responsible for compiling cadastral maps, assigning cadastral numbers, maintaining ownership registers, and archiving ownership information. The service would be responsible for transmitting to the Tax Inspectorate Office copies of cadastral maps and the information needed for tax administration. This service might be the responsibility of the Minister of [Interior?].
  
- ! Building Inventory Offices should be responsible for supplying the Tax Inspectorate Office with copies of building plans and passports.

Ideally, an integrated, master cadastre would be developed. It would contain information now found in several independent sources as well as information that will need to be collected in the field. Decisions that should be made are whether an integrated cadastre is feasible and the extent to which the computerization is feasible.

The rationale for separating responsibility for the juridical cadastre from the fiscal cadastre is to break the

link in peoples' minds between registration of property rights and property taxation.

An alternative institutional arrangement might be to give the City of Yerevan responsibility or administering property taxes within its territory. Another alternative would be to assign valuation and tax collection to separate ministries, as is done in some eastern european countries. Still another alternative would be to create a national real property information service, which would be responsible for property valuation as well as the functions of juridical cadastral service mentioned above. Under this alternative, the Tax Inspectorate Office would remain responsible for property tax collection.

City government offices may need to be reorganized as privatization proceeds.

Two major managerial issues need to be addressed by the government. Leadership and coordination must be assured. Bureaucratic barriers to cooperation must be avoided. The government needs to address the first problem soon. Solving the second problem may require changes in "institutional cultures," which could take more than a year to accomplish.

The development of new cadastral data systems and imposition of new property taxes will imply profound changes in the way much work is done in the institutions concerned. A successful transition to new modes of operation will require more than training in new procedures and new disciplines, such as property valuation. In some instances, changes in the institutional culture of an organization may be required. For many individuals, work may become less menial and more challenging. Eventually, many will have to feel comfortable using computers and with such things as computer-assisted mass appraisal (CAMA) systems. Managers and supervisors will face commensurate challenges. They will have to communicate new visions effectively. They will have to judge potential and help the staff develop new skills. In short, familiar, comfortable ways of working may no longer be appropriate as institutions strive to increase the quality of work, increase productivity, and gain credibility.

## V. DEVELOPING CADASTRAL RECORD SYSTEMS

The development of improved cadastral record systems will be crucial to the ultimate success of land and real estate market reforms and of the imposition of land and building taxes in Armenia. This section describes modern cadastral record systems, compares existing systems in Armenia to those systems, and outlines some of the changes needed.

### A. MODERN CADASTRAL RECORD SYSTEMS

Modern cadastral record systems are composed of the following basic components: cadastral maps, a cadastral numbering system, and associated land, building, and ownership records. The degree of integration of the maps and associated records depends on such factors as the uses of the system, the organizations that contribute to the system, the uses they make of the system, and available technology.

There are two main types of cadastral record systems: juridical cadastres and fiscal cadastres. The juridical cadastre is an archive of information on real property ownership. The fiscal cadastre serves as the basis for taxes on land and buildings. The systems are linked by cadastral maps and the cadastral numbering system. Fiscal cadastres are integral parts of property tax systems. Computer technology makes integration of the cadastres feasible. However, most countries maintain two parallel cadastral systems because of important functional differences.

#### 1. Cadastral Maps

The foundation of a modern cadastral record system is a complete and up-to-date set of cadastral maps detailing the location, shape, and size of every parcel of land. It has been said that the first requirement of a property tax system is a set of continually updated cadastral maps. Compiling cadastral maps is analogous to completing a jigsaw puzzle. The puzzle has to be complete before one can be sure that all the pieces are in their proper places and that there are no missing or extra pieces.

Solving the cadastral map puzzle requires that the *legal description* of every parcel of real estate be displayed graphically on a map. A legal description is a statement in

words and codes of the location and boundaries of a parcel of land and is used to identify the parcel for legal purposes.

A cadastral map should display:

- ! Boundaries of all parcels
- ! Parcel dimensions or areas
- ! Parcel identifiers (cadastral numbers)
- ! Location and names of streets, highways, alleys, railroads, rivers, lakes, and so on
- ! Block and lot numbers and, if scale permits, names and boundaries of subdivisions and plats
- ! Boundaries of political subdivisions
- ! Other basic map information including a map number, title block, revision block, legend, map key, north arrow, and keys to adjoining maps

If geographic coordinates are displayed on cadastral maps, it is possible to pinpoint the location of each parcel. This information will allow the calculation of the distances between parcels and other locations or "value influence centers" that have an important bearing on land values and economic obsolescence factors. Having geographic coordinates in cadastral records enables property tax administrators to use other spatial data files.

A cadastral map system consists of the base maps on which parcel boundaries are drawn; source data on the location and boundaries of parcels, such as certificates of title, surveys, subdivision plats, and other map work records; the resulting cadastral maps; index maps; and a plat or subdivision index.

Maps should be compiled and maintained according to professional standards. Map sheets should be of a uniform, convenient size. Map materials should be easy to draw on, ensure clear crisp reproduction, and be durable. Maps should be drawn to an appropriate scale. The proper scale is one that allows the largest possible area of land to be displayed on a map sheet while showing the necessary detail. The scale for urban areas should be about 1:1,000. Maps will be easier to use if layouts, linework, and symbols are standardized.

In a strictly legal sense, cadastral maps used for property tax purposes may need only to be accurate as of the assessment date. However, parcels of land can be combined, divided, and sold at any time, and many people need current

information about land ownership patterns in order to reduce confusion and to complete transfers. Moreover, continually maintaining cadastral maps makes practical administrative sense, because work flows can be smoothed out.

The elements of a modern cadastral map system constitute part of a geographic information system, as will be noted later. Cadastral data are visualized as a layer of data on base maps that are linked to a geodetic reference frame.

## 2. Cadastral Numbering Systems

Each parcel should have associated with it a unique identification number, which serves as the primary key to records in various registers and files.

People commonly identify parcels by their addresses, their owners, or some other property characteristic. These "identifiers" are ambiguous. Although legal descriptions provide a precise identification, they are unwieldy. In contrast to these means of parcel identification, cadastral parcel identifiers--or cadastral numbers--are uniform, manageable numerical expressions. They are used to link parcel information on maps with parcel data in other files. Cadastral numbers should have legal status. That is, it should be sufficient legally to identify a parcel only by its cadastral number. Cadastral numbers should be required on sale agreements, other transfer documents, and building permits.

Cadastral numbers should meet the criterion of *uniqueness*. Uniqueness is a one-to-one relationship between the size and shape of a parcel and its number. It is the most important attribute of a parcel identifier. Other important characteristics of parcel identifiers include (1) permanence--a number should change only when parcel boundaries change; (2) simplicity--uncomplicated, short, sequential identifiers are easier to use; and (3) reference to geographic location. However, the design of the cadastral numbering system will require a compromise; it is impossible to satisfy all of the above criteria equally well.



Three general types of cadastral numbering systems satisfactorily meet the criteria listed above: map-based, geographic coordinate-based, and government survey-based. A map-based cadastral number system identifies a parcel by assigning to it a string of codes containing at least three elements: (1) the map sheet, (2) the block in which the parcel is located, and (3) the parcel. Geographic coordinate-based cadastral numbering systems identify a parcel by the coordinates of either the visual centroid of the parcel or of a point on the boundary. The coordinates may be abridged or rearranged to reduce their length or increase their understandability. Either of the first two would be appropriate for Armenia.

Uniqueness in a cadastral numbering system is achieved by assigning a new number to each "new" parcel, or parcels, that results from the combination, or split, of "parent" parcels. Existing numbers should be "retired" and not assigned to one of the resulting parcels. However, adding a suffix to the number of a "parent" identifier is another way of maintaining uniqueness. A record of retired numbers and the parcels associated with them should be maintained for future reference.

### 3. Title (Ownership) Records

There are two basic types of title record systems: Registration of evidence of title (deeds) and registration of titles themselves. In the former system, the government office responsible for registering deeds takes no position with respect to the validity of any claim to an interest in a parcel of property. Would-be buyers must decide whether the seller's claim of ownership is valid and sufficient. Insurance may be purchased to protect the buyer from unexpected claims of ownership from others. In a title registration system, the government, in effect, guarantees title. The "advantages" of deed registration systems include lower governmental costs of administration and almost instantaneous updating of title records. The advantage of title registration systems is greater certainty regarding title.

Both systems require registers containing summary information to be maintained. Both require copies or images of documents to be archived and indexed.

### 4. Land and Building Characteristics

Land and building records should contain the information needed to value properties. The information also is used to classify properties and to satisfy property owners that the property tax administration is familiar with the properties. The first step in designing or evaluating property records is to determine the information needed to "specify" the valuation model or models that will be used to value property. In general, records should contain the location, site, and improvement characteristics that determine the attractiveness of a property in the marketplace. The following are important location and site characteristics.

- ! Market area or neighborhood
- ! Land use
- ! Parcel size and shape
- ! Service (utilities) and transportation network access
- ! Zoning, other land-use controls, or other restrictions on development
- ! Topography, terrain, and soil characteristics
- ! Lake frontage, golf course frontage, and the like
- ! Views--desirable and undesirable
- ! Surrounding land uses and their influences
- ! Distances to value influence centers (such as central business district, schools, and shopping--usually requires geographic coordinates)

Important improvement characteristics include:

- ! Building use
- ! Architectural design
- ! Building size (ground floor area or total floor area) and shape
- ! Number of stories
- ! Construction quality
- ! Building materials in major building components (such as foundations, flooring, framing, exterior walls, interior partitions, and roofs)
- ! Actual age
- ! "Effective" age or condition
- ! Basement and attic areas (finished and unfinished)
- ! Garage area and type
- ! Porch, deck, and patio area and type
- ! Other auxiliary buildings and improvements (such as fencing, paving and swimming pools)

- ! Number of rooms, bedrooms, and full and half bathrooms (or bathroom fixtures)
- ! Number of fireplaces
- ! Type and coverage of heating and cooling
- ! Electrical service

Good valuation practice requires a decision as to the "highest and best use" (or "most probable use") of each parcel. Many mass appraisal systems assume the current use will continue indefinitely. In many cases this is a reasonable assumption. However, where development and redevelopment are occurring or are about to occur, such an assumption is not supportable. Information on current use is necessary both for stratifying land and for valuation. In classified property tax systems, information on use is essential to assign parcels to their proper class.

Data must be kept up-to-date if they are to describe properties and market conditions accurately. Data maintenance activities include regular reinspections of all properties and special inspections of properties that have been sold and for which building permits have been issued.

Building permits are the source of essential information about construction activity. The property tax administration should arrange to get copies of all building permits issued. Permits should be tracked by maintaining a log of properties for which permits have been issued. Those properties should be inspected as near the appraisal date as possible to ensure that they are properly valued. Property records should contain basic permit information such as the type of permit and the date it was issued.

The interval between regular reinspections should be no longer than four to six years. Reinspections should be coordinated with revaluations. Frequent inspections ensure that land and building descriptions are accurate and up-to-date.

##### 5. Sale Price and Other Market Data

The property tax administration should maintain a freestanding sales data file. A record should be made of each sale. The record should contain information about the sale price and terms, a description of the property that was sold

(which is why sold properties should be field inspected), and the tax administration's opinion as to the usefulness of the sale in valuation and in quality assurance studies.

Copies of certificates of titles, deeds, and other real estate transfer documents are the basic sources of sales data. For this reason, the agency responsible for the juridical cadastre should be required to supply the agency responsible for valuation copies of such documents routinely.

Actual sales prices provide the most objective evidence of market values. Sales used in valuation or in quality assurance studies must be reliable. Information about the property sold, the sale price, the terms of the sale, the date of the sale, and the circumstances of the sale must be accurate. If the available information is incomplete or questionable, additional efforts to collect and verify information should be made. A party to the sale (the buyer, the seller, or an agent) is the best source. It is necessary to determine whether each sale is an "arm's-length, open-market" sale, to verify the property that was sold (particularly if movable property was included in the sale), to verify the price, and to determine whether adjustments to the reported price may be necessary.

Adjustments to a nominal sale price may be desirable in a number of circumstances to reflect better the price that was paid for the immovable property concerned. If movable property was included in the sale, the value of that property should be deducted from the total sale price. If the seller lent money to the buyer to complete the purchase, and if the rate of interest charged was different from the market rate of interest, the sale price should be adjusted for the difference. Such adjustments are more likely to be required for sales of commercial property. Finally, it is sometimes necessary to adjust sales prices for differences between the dates of sale and the date of valuation. This occurs when price levels are changing significantly, such as when inflation is high.

When large numbers of residential sales are available and immovable property transfer documents have been found to be reliable, additional verification may not be required. Sales can be confirmed by mail questionnaire, telephone interview, or personal contact.

Sale validation codes should be developed. The codes indicate whether a sale has been determined to be an open-market, arm's-length transfer and, if not, why it was rejected. All sales should be included in the sales file. However, the property tax administration should be able to select those needed in a particular application.

Current information on rental property income and expenses is needed for the income capitalization approach to valuing property. It is desirable to require owners or managers of such property to file a return (which should be treated confidentially). Such a standardized reporting form facilitates reporting and analysis. Properties for which data are available should be grouped by type for analysis. Spreadsheet programs can be developed for entering reported figures, adjusting atypical figures, and estimating unreported data.

## B. EXISTING CADASTRAL RECORDS IN ARMENIA

### 1. Cadastral Maps

Presumably cadastral maps exist for agricultural areas. Cadastral maps of urban areas do not exist. However, there appear to be 1:2,000 topographical base maps of urban areas. These maps of Yerevan show approximate outlines of parcels and buildings. I believe these are photogrammetric, although I was unable to confirm this. However, if my impressions are correct, adequate maps exist to build a working cadastre. (Maps at a scale of 1:1,000 would be preferable in areas with small parcels. Topography is not necessary for basic cadastral purposes.) A crude estimate of the number parcels to be put in the land cadastre initially in Yerevan is 50,000.

### 2. Cadastral Numbering System

There apparently is no system of cadastral numbers in urban areas, and available maps do not show building numbers.

Urban property records variously are reported as organized according to (1) their owners' identification numbers or (2) privatization registration numbers within an apartment block (which would represent a rudimentary parcel-based cadastral numbering system).

There are two problems with a person oriented "cadastre." The chief problem is difficult access to the information in the cadastre. That is, a would-be buyer or other interested person would need to know the owner's name to access information. One must then construct a "chain of title" and search for the records associated with each owner. To compound this difficulty, I was told that the building inventory office regards ownership information as confidential. (My question may have been misunderstood, because the Scientific Research Center for City Management Systems seems to visualize open records, in harmony with the fundamental principle of openness in cadastres.) The second problem is that the tax administration cannot readily determine whether all property has been inventoried, as was pointed out in the discussion of the need for cadastral maps.

*Propiskas* may provide for a measure of cadastral control. However, tight governmental control of where one lives is compatible with neither democratic society nor a market economy. *Propiska* controls also probably encourage "illegal," unregistered transfers of property.

### 3. Ownership Records

Apparently no pre-Soviet property rights are recognized. Consequently, many private property rights are (or will be) of recent origin. This will be an advantage in establishing the juridical cadastre.

Josephs describes the property transfer process in some detail. In summary, the seller and buyer must obtain a certificate or "license" from the building inventory office, present the license and the agreement of sale to the notary, who issues a certificate, pursuant to which the local council declares the transaction valid. A person interested in privatizing a home also must apply to the city building inventory office. If the application is in order, the office issues a "license" to acquire the housing unit in question, and a similar transfer procedure is followed. Privatizations and use rights are registered in the building inventory office.

As noted above, licenses are treated confidentially. Owners' addresses are said to be regarded as confidential. If this is true, it represents a serious obstacle to the develop-

ment of efficient real estate markets and property tax administration.

Notaries collect a notarial fee based on the declared price. Presumably, notaries maintain records of the agreements presented to them and councils maintain records of their actions (but I interviewed neither).

#### 4. Land and Building Records

A serious obstacle to an efficient real estate market and to effective property taxation is the absence of land parcel records in cities. Little need for such records was felt when most property was state-owned. In effect, the entire area of a city block could be viewed as one parcel.

This shortcoming is recognized by both the building inventory office in Yerevan and the Armenian Urban Research Institute. Licenses provide space for a plot plan. The institute has drafted a transfer form which also would require a plot plan. Any such plot plans can, and should, be used in building the urban land cadastre.

Agricultural land records (maps?) evidently contain data on parcel size and soil class, although the latter may only be on a regional basis. Geological maps also exist. They provide information about the suitability of land for building and about seismic risks.

I do not think a building cadastre exists. However, a considerable amount of building data exist in building "licenses" and "passports." As previously noted, passports are not linked to specific parcels of land but licenses may be.

Licenses are forms that resemble property record cards used in the United States. The supplementary information of a license contains notes of supporting documentation, such as the local council's decision regarding the ownership permit.

An apartment "license" form provides space to record the occupier's name and a description of the apartment, the building in which it is located, and the parcel on which the building is situated. The land information section provides space to record total area (per document and measured); areas walled, covered with sidewalks, slated, bear ground, orchard,

and garden; and cost. The building information section provides space to record the number of flats, the number of habitable rooms, general surface area, and areas classified as habitable, complementary, and other. Also recorded is whether there is central heating, hot water supply, bathrooms, and kind of combustibles. As previously mentioned, there is space for a sketch of the parcel's boundaries and the perimeter of the building(s). Space also is provided to record the permit (passport) no.; type; date of construction; foundation; walls; cover; ceiling; electricity supply; water supply; sewerage; gas supply; ground floor area; cubic content; and maintenance costs. There is interest in photographing buildings.

Passports contain similar information plus floor plans, an elevation, and sometimes a survey of the condition of the building. About 40 percent of buildings have passports.

The data generally are on paper, although the Scientific Research Center for City Management Systems is developing PC software for both the building inventory office and the housing maintenance department in Yerevan. Licenses are archived and are available only to owners, government officials, and the courts.

#### 5. Sale Price and Other Market Data

The Armenian Urban Research Institute has begun to monitor market activity and to collect sales data. Data have been collected on over 400 sales of housing units. The sales occurred between July 1991 and December 1992. The records contain the address, features such as area, conveniences, land, asking price, and selling price. The data are not computerized.

The sales data were compiled on spreadsheets by month of sale and by zone. The sales spreadsheets have the following columns:

<u>Column No.</u>	<u>Content</u>
1)	Observation number
2)	Address
3)	Price per M <sup>2</sup>
4)	Number of rooms
5)	Total area (M <sup>2</sup> )
6)	Land area (if applicable)



- 7) Price in rubles or dollars
- 8) Source
- 9) Date of collection of data
- 10) Floor

I suggested that future monitoring efforts should try to get information on quality of construction, state of repair, and view. Information on room arrangements also may be desirable. The passport information system being developed by the Scientific Research Center for City Management Systems provides for room arrangement codes, indicating whether the door is to a hall or is between two rooms, an inferior arrangement. I asked whether geological factors were considered by the market.

#### 6. Movable Property Register

Balance reports may provide the basis for a rudimentary movable property register. However, I saw no balance reports and I did not discover whether there are any features of the accounting system that would affect the usefulness of these data on asset values. Specific questions include what kind of detail do balance reports provide about specific parcels of real property and other physical assets?

### C. RECOMMENDATIONS

#### 1. Overview

Necessary reforms of cadastral systems will encompass changes in institutional arrangements, the design and implementation of new record-keeping systems, and changes in institutional cultures. Organizational changes were discussed in section IV.

The scope of work to develop cadastral record systems includes:

- ! Starting cadastre
- ! Guidelines for establishing urban parcel boundaries
- ! Compilation of provisional cadastral maps
- ! Establishment cadastral numbering system

- ! Property records
  - ! Selection of characteristics to be maintained, development of codes, and the like
  - ! Data collection strategy, input from existing data, tax return, field canvass, or combination
- ! Ownership/taxpayer records
- ! Sales and market data
  - ! Sales data collection procedure
  - ! Sales validation procedure, coding, etc.
  - ! Build sales file
  - ! Build other market data files
- ! Manuals and training
- ! Automation plan

The focus of work initially should be on the development of a provisional urban land cadastre.

## 2. Urban Land Cadastre

A parcel oriented or geographically organized urban land cadastre should be developed in lieu of the current "person-based" cadastre. Geographical cadastres are impersonal and the data contained in them are not sensitive or confidential. As implied by the jig saw puzzle analogy, parcel-oriented cadastres are necessary for property tax control purposes. They provide easier general access to data essential to efficient real estate markets, ad valorem taxation, and wise decisions about land use.

The implementation plan should include the development and installation of a cadastral numbering system and the preparation of cadastral work maps on which cadastral numbers and building numbers are inscribed.

Because an urban land cadastre does not now exist, a working, provisional cadastre needs to be developed quickly.

As previously mentioned, I define a parcel of land as "a contiguous area described in a single description in a deed or as one of a number of lots in a plat; separately owned, either publicly or privately; and capable of being separately conveyed." The primary task in developing the provisional urban land cadastre is to delineate parcel boundaries provisionally.

As previously noted, the Armenian Urban Research Institute has proposed a registration form requiring adjoining users to agree as to the boundaries between parcels. Reaching agreement may be time consuming and may not always be possible. What follows are some suggested guidelines for drawing parcel boundaries when conclusive evidence of the boundaries do not exist.

The drawing of provisional boundaries should be legally authorized, but boundaries so drawn should not be treated as legally establishing a parcel's boundaries.

The guiding principle is to draw parcel boundaries around (a) every vacant piece of land (such as a park, building site, and the like) and (b) every primary building (such as an apartment block) including the land around auxiliary buildings (such as garages and sheds. A complex of buildings can be on a single parcel. However, it is desirable to avoid having a building straddle two or more parcels.

Parcel boundary lines should be drawn wherever there is an obvious change in land use or occupation, such as between abutting walls of adjoining buildings, fence lines, hedges, and the like.

Many times the proper location of boundaries will not be obvious, such as when:

- ! There is open space around buildings;
- ! The widths of street and other rights of way have not been established;
- ! A building is illegally constructed; and
- ! It is unknown whether alleys and passage ways are public or private.

In such cases, the cadastral administration will have to make its best guess as to the location of the parcel boundary. As a general rule, when the land areas on both sides of the boundary are either both publicly owned or used or are both privately owned or used, the boundary should divide the space equally. When one side is privately owned or used and the other side is publicly owned or used, the boundary should be drawn in a way that favors the public's interest.

The initial work of delineating parcel boundaries should be done in the field, using available information on land ownership and use. Provisional boundaries should be crudely sketched on work maps or prints of aerial photographs. Provisional cadastral numbers should be assigned. A property record should be begun, noting the cadastral number, an indication of whether the parcel is vacant or is improved with buildings, the address of any buildings, any measurements that were made or were available, and any other pertinent information. (A decision will have to be made as to the extent of any building inventory work that would be done at the same time.)

Clean drawings of parcel boundaries should be made on cadastral base maps (again prints of aerial photographs could be used). Care should be taken to consider possible distortions in photographs caused by terrain.

The provisional cadastral maps should be open for public review and comment. Interested parties should be allowed to present evidence as to where boundaries should be adjusted, provided other interested do not object. The Armenian Urban Research Institute's recommended temporary land committees would be suitable bodies to hear comments and to attempt to resolve differences. Policies and procedures to guide the committees' deliberations should be developed.

### 3. Other Matters

The agricultural land cadastre probably should be reviewed before 1994, when it will be legal for agricultural land owners to sell properties that they received under the 1991 agricultural land privatization program.

The privatization process should be streamlined. The system being developed by the Scientific Research Center for City Management Systems should help.

As previously mentioned, there should be mutually reinforcing incentives to disclose market data accurately during the transfer process. Capital gains should be taxed. Mortgage regulations should require justification of prudent lending (that is, an appraisal of the property). There should be penalties for failing to disclose information or to disclose inaccurate information.

Also as previously mentioned, a freestanding sales data file will be necessary for property valuation.

Regardless of the technological options currently available in Armenia, cadastral data systems should be developed with eventual computerization in mind. In particular, eventual development of multipurpose geographic information systems should be a goal.

## VI. VALUATION

Estimating the market value of taxable property will be a major challenge. As an example of the need for valuation methodologies, existing cadastral values are said to be 140 rubles per M<sup>2</sup> while market prices are in the range of 100,000 to 300,000 rubles per M<sup>2</sup>. Another reported that cadastral values range between 130 and 270 rubles per M<sup>2</sup>. In other words, the state price for a four room apartment would be 12,000 rubles, which would sell for 4 to 5 million rubles on the open market. As this example suggests, government-established cadastral values are envisaged to have uses beyond property tax assessment. They might be used as the basis for taxes on transfers (including inheritances and gifts). In addition, they would be used in privatization.

### A. CONTEMPORARY VALUATION PRACTICES

#### 1. Market Monitoring and Analysis

As a prelude to valuation, property tax administrators must monitor market activity and to examine that activity for clues as to the factors that affect sales prices and underlying market values. One task is to identify submarkets, such as the markets for vacant land, housing, and so forth. Another is to analyze the effects of location attributes. Still another is to consider changes in price levels over time.

#### 2. Mass Valuation

For the most part, property tax administrators practice "mass valuation." Using standard data sets, mass valuation models, and quality assurance procedures, tax administrators are able to value large numbers of properties economically. Mass valuation, like single-property valuation, is applied economic analysis. In valuation, factors affecting the supply and demand of immovable property are expressed in valuation models (formulas). Using statistical methods and computer-assisted mass appraisal (CAMA) systems, property tax administrators can produce valuations that take into account more supply and demand factors than usually are considered in conventional single-property valuations. Consequently, mass valuations can be highly accurate.

A valuation model is a mathematical representation of the behavior of the immovable property market at a particular time. (For useful general discussions of mass valuation, see *Property Appraisal and Assessment Administration* published by the International Association of Assessing Officers in 1990 or *Improving Real Property Assessment: A Reference Manual*, published by IAAO in 1978.) There are four steps in mass valuation: (1) model specification, (2) calibration, (3) application, and (4) review and evaluation. *Specification* involves deciding which supply and demand factors to consider (such as land area and number of stories) and their assumed relationship to market value (that is, do they add to or detract from value; is the mathematical relationship additive or multiplicative?). *Calibration* is the analytical work necessary to quantify the relationships postulated in the specification process. (Multiple regression analysis (MRA) is a widely used computer-assisted method for calibrating mass valuation models.) *Application* is the mechanical or computerized process of estimating property values by applying the calibrated model. *Review and evaluation* is the work the property tax administration does to ensure that the mass valuation models are performing satisfactorily. In the best of mass valuation practice, each computer-generated value estimate is reviewed before a valuation notice is sent or the value estimate is used as the basis for a tax bill.

Mass valuation models typically are based on three broad "approaches to value." the names given these approaches in the United States are: the sales comparison approach, the cost approach, and the income approach.

a. Sales Comparison Approach: In the sales comparison approach, the valuer attempts to determine how differences in the characteristics of properties that have recently been sold affected the prices paid for those properties. If sufficient sales data are available, mass valuation models based on the sales comparison approach provide the most supportable estimates of value. Initially, simple models are advisable. However, the property tax administration should plan to employ more sophisticated models as real property markets develop and the volume of available sales increases. The methods used to calibrate the models might begin with spreadsheets and descriptive statistics. Multiple regression analysis can be used when the volume of

sales in a model group exceeds 30 or four sales for every independent variable in the model.

b. Income Approach: The income approach refers to procedures for finding the present value of the income a property is expected to generate in the future. The approach is therefore appropriate for the valuation of income-producing (rental) property. The income approach is based on the premise that the value of such a property is directly related to the amount, duration, and certainty of the income that will be generated by the property in the future. The notion that income receivable in the future is always worth less than an equal amount of money currently in hand (the concept of time preference) underlies all income approach techniques. The degree of time preference can be viewed as a function of four factors: anticipated loss of purchasing power (inflation), loss of liquidity, the costs of investment or loan management, and risk. These factors are combined to form a *capitalization rate*, defined as the relationship between income and value, as in the formula,

$$R = I/V,$$

where R is the capitalization rate, I is income, and V is value. If the income from a property is known and the capitalization rate can be determined, this equation can be rearranged to estimate value as follows:

$$V = I/R.$$

An examination of this formula will reveal that for a given amount of income, a higher capitalization rate will result in a lower property value, and vice versa. The greater the risk, inflation, and the like, the greater the capitalization rate. It should be noted that the second equation represents a special, basic capitalization model or formula--in practice, more complex models may be developed in order to accommodate finite income streams, variations in the amount of income, and variations in components of the capitalization rate.

In mass valuation practice, separate models can be developed to estimate market rents, vacancy and expense ratios, income multipliers (sale price divided by net income), and overall rates (net operating income divided by sale price). As with sales comparison models, the independent



variables selected for the models should help explain variations in the dependent variables. Independent variables might include location, property type, building condition, and (sometimes) land/building ratios. Many of the above analyses can be done on spreadsheets if the samples are small enough.

c. Cost Approach. The cost approach is applicable only to properties with buildings and other improvements. It is based on the premise that the value of such a property equals the cost of acquiring an equally desirable substitute, with the process of acquisition being the construction of the substitute building. The cost approach therefore begins with estimating the cost of constructing a new but otherwise equally functional building (replacement cost new or "RCN") on the same site as the property being valued. The site is valued as if vacant and available for development at its highest and best use (see below). The market value of the building is estimated in two main steps. First, the current cost of constructing the building is estimated. Market value, however, is based on the building in its current condition and circumstances. If the current cost of the building is greater than its current market value, the difference is termed *accrued depreciation* or diminished utility. The second step, therefore, is to estimate the amount of accrued depreciation from all causes.

The estimation of the current cost of buildings generally requires more detailed description of the design of, and materials used in, constructing the buildings than are needed for the sales comparison and income approaches. The approach also requires data on current costs of labor, materials, and other direct and indirect costs of construction. Statistical agencies and firms may compile data on building costs, eliminating the need for the property tax administration to do it.

In mass valuation, current building costs are expressed on a per-unit basis (for example, per-square-meter) and arranged in schedules, which are compiled in a cost manual. Separate schedules are developed for each building type and construction quality class. Computerizing cost schedules speeds calculations and improves accuracy.

The success of the cost approach depends on reliable estimates of accrued depreciation and land values. In mass

valuation, standard depreciation allowances are contained in tables or schedules. These depreciation allowances should be derived from market data.

d. Land Valuation: Special attention should be devoted to land valuation because accurate land values form the base of an effective mass valuation system. A credible land valuation program requires that land values be updated regularly to reflect the current market.

Land is best valued by the sales comparison approach. Where sales are inadequate, other techniques must be used. Mass valuation of land involves developing models of per-unit land values through analysis of sales. These models are documented in tables of land rates and adjustments and on land value maps.

Preliminary steps in the mass appraisal of land are determination of appropriate strata and units of comparison. Appropriate bases for stratification include permitted use, location or neighborhood, and size of parcel. Stratification ensures that land values will be based on market data for properties subject to similar supply and demand factors. Land in each use classification should be assigned an appropriate unit of comparison to facilitate analysis. The chosen units should reflect the way in which market participants analyze land values. If parcels are fairly uniform in size, the parcel itself might be the unit of comparison. If parcels vary in size, an area measure should be the unit. Street frontage is another frequently used unit of comparison.

Land sales should be expressed as price per unit and plotted on maps. This helps make patterns visible and establish benchmark values.

Per-unit land values tend to vary with size and depth of parcels, and appropriate adjustment factors should be developed. Depth factors (arranged in tables) can be used to adjust frontage values for varying depths of lots. Similar adjustment factors may have to be made for irregularly shaped parcels, corner locations, and so forth.

In addition to using automation to organize and display data, computerized land models are possible. To prevent the model from being dominated by several high value sales, the dependent variable is best expressed on a per unit basis (for

example, per square meter). Land characteristics may include size, shape, topography, traffic, view or frontage, and distance variables. The model can be calibrated with either additive or multiplicative MRA. Global response surface analysis can also be used. Although successful results have been reported, land valuation models often prove unacceptable, reflecting the inherent difficulties of land appraisal. Sales prices may be insufficient in number or unreliable, and capturing the situs value of individual parcels is difficult. Even where land value models can not be used directly, however, they can help establish market relationships and appropriate adjustments for situs factors, such as corner location, lake frontage, oversized lots, and so forth.

Land valuation is particularly difficult in built-up areas with few land sales. There are several conceptual solutions to this problem. One seek expert opinions as to the value of specific, representative sites. Another is to use land residuals (sales prices less RCNLD) in modeling. However, problems in accurately estimating RCNLD render this approach difficult. Another, more promising solution, where at least some land sales are available, is to include both vacant and improved parcels in model development. The model would include the usual land and building characteristics, along with a binary variable coded "1" for improved parcels and "0" for vacant parcels. The variable thus represents the premium (or decrement) in value associated with site improvements not captured in other variables. The model can be decomposed into land and building values: the model constant ( $B_0$ ) is part of land value and the binary improvement variable constitutes part of the improvement value. If there are insufficient vacant land sales to use this approach, several other options using improved sales are available.

### 3. Model Application and Valuation Review

The initial application of a mass valuation model is straightforward. However, the property value estimates that result from the application of a sophisticated mass valuation model should be reviewed on a property-by-property basis before the estimates are used to determine tax obligations. The value review process considers data quality, the appropriateness of the valuation model in question, and whether calibration was successful. Consistent with the principles of quality assurance, performance reviews should take place at each stage in the model development and

application process. Reviews may include prereviews, desk reviews, and field reviews. The nature of the valuation program itself and the properties being valued affect the emphasis that should be given to any particular step in the review process.

Data on property characteristics should be reviewed with the objectives of detecting possible data errors and "outliers." Outliers are exceptional properties that may skew model calibration or that may be outside the range of properties for which the model is valid. The data review should be most stringent with properties that have recently been sold and that have new buildings or other changes. It is important to determine whether the sale took place before the change occurred. The property tax administration should also consider whether the sale price was consistent with expectations.

An essential step in the model application and review process is to apply the model to a test group of properties. The test group should not include any of the properties used to develop the model. Most of the test group should have been recently sold, so that the sales prices can be used as a basis for comparison with the appraised values. A ratio study can be used to decide whether model performance is satisfactory.

Valuers, if they are experienced, also can compare model-generated values with the prices--or range of prices--for which they would expect the properties to sell. Consistent or marked discrepancies in the two estimates suggest that further review is warranted, although it must be recognized that the valuer's judgment can be faulty. In a similar fashion, if more than one valuation model has been developed, the consistency in the estimates produced by the models provides a useful gauge.

Review procedures should be highly structured and described in a manual. The discretion valuers have in changing model-generated values should be described. Insignificant changes should not be allowed because of the expense of processing them. Reviewers also should document why they overrode model-generated values. Sometimes codes can be designed for this purpose. Valuers also should initial the records they change so that an audit trail can be maintained.

#### 4. Communicating the Results

Once developed, valuation models and resulting values must be disclosed to taxpayers. The manner in which this is done affects the acceptance and supportability of the valuation program, as well as overall perceptions of the property tax administration. The ability to show clearly how values were calculated will help resolve complaints and lend credibility to the valuation program. Taxpayers are entitled to know, at least in a general sense, how their values are calculated. Clear explanations are one measure of good public service.

#### B. STARTING PRICES IN ARMENIA

The Armenian Urban Research Institute has developed initial or "starting prices" for use in the privatization of land and in property taxation. They are intended to replace current official cadastral values which are small fractions of current market prices. The starting price methodology is intended to be used until more sophisticated and detailed valuation methods can be implemented. See *Paid Use of Land*. The starting price valuation methodology is based on market data and is acceptable for the immediate purposes. The methodology bears similarities to methods being implemented (or considered) in Estonia, Bulgaria, and the Czech Republic. Initially, starting prices were set for 1991. They have been updated to 1993 price levels. The 1993 prices have been presented to the Armenian government.

The starting price estimating exercise involved delineating zones (neighborhoods) in the City of Yerevan. A panel of about five experts delineated zone boundaries. Each expert made a draft, and a consensus was reached. One hundred thirteen zones were identified. These were grouped into five land value classes. Each class has approximately equal land value per square meter. The values were calibrated using the approaches discussed below.

Factors considered in identifying zones included transportation wait time, population density, and density of employment. The zones have a "median pedestrian radius of approachability to objects" of 750 to 800 meters, otherwise they are about 180-200 hectares. Data on zones include zone number, name, area in hectares, percent the area of the zone is of total area, population, percent population is of total, area of living space, percent of total, area per person,

intensity (living space/total area), and living space per person in M<sup>2</sup>.

The criteria for evaluating the attractiveness of zones included: (1) quality of territory (terrain and the like), (2) structural characteristics, (3) functional intercommunications, and (4) ecological factors. Expert panels were used. Panel members' ratings were statistically analyzed. In addition, other cities and towns were ranked according how their land values compared to Yerevan's.

Three types of sales were analyzed: (1) sales of vacant land, (2) sales of dwellings (state and private), and (3) (rarely) sales of other types of buildings.

Differences in open market prices of standard apartments (on the third floor, assuming that the buildings are in comparable condition) reflect the land value gradient. Three estimating methods were used, and the resulting estimates were reconciled. The basic formula was: The relative value of land in zone P equals the cost of a flat in zone P minus the cost of a flat in zone P+1. Prices were expressed per M<sup>2</sup>.

Based on the market analysis, the ratio between the least valuable zone in Yerevan and the most valuable was 1:20. The Institute's proposed starting price table had a range of 1:7. The city approved a table with a range of 1:3. If the "approved" table were implemented, the resulting taxes would be regressive.

Based on initial market analyses, land to total property value ratios variously are reported to range between 8 and 15 percent (for housing) and 20 and 25 percent of total value.

### C. FUTURE PLANS

The Armenian Urban Research Institute advocates annual revaluation (employing indexation) while inflation is high and immovable property markets have not matured. Thereafter, a three- to five-year cycle is contemplated.

The Institute has proposed a program for an ongoing analysis of Yerevan's land and housing market. It appears to correspond to the suggestions I made and should be accepted. Research should be begun on more sophisticated mass valuation

methods using PC-based statistical packages. Both sales comparison and income approach models should be considered.

The State Tax Inspectorate need to develop expertise in market monitoring and mass valuation. A valuation team should be formed. It could work with the Institute's experts. Members of the team also could take property tax courses offered by the Organisation for Economic Co-operation and Development. Future technical assistance missions could provide training exercises. (Other educational possibilities include mass valuation course offered in the United States by the International Association of Assessing Officers and correspondence courses offered by the University of British Columbia.)

## VII. TAX ADMINISTRATION

Tax collection and enforcement are strategically the most important components of a property tax system. The property tax is a fiscal instrument designed to provide government revenue. The property tax can also be used to improve efficiency (for example, vacant land taxes) and improve equity (for example, taxing real estate capital). These results can only occur, however, if the property tax is uniformly and effectively collected. Property tax objectives in law--revenue, efficiency, and equity--cannot be realized unless revenue is actually received.

Property taxation is not truly "taxation" without strict enforcement. Taxation without enforcement should better be called "contribution." The property tax becomes a system in which only those who want or are forced to will pay (contribute). The property tax will not be based on "ability to pay" but on "ability not to pay." Such a tax usually falls on the poor and politically weak.

If revenue is the main purpose of property taxation, identification and valuation of the tax base are only supportive activities--important though they are, they are not the ultimate purpose. Therefore, a property tax agency should not view itself as a mapping or valuation agency. Maps, property information and property valuations are only intermediate results needed to achieve the final output, revenue collection.

The five basic steps of an effective tax collection and enforcement program are:

- 1) Tax liabilities should be assessed.
- 2) Taxpayers should be notified of their tax liabilities.
- 3) Taxpayers should be persuaded that they should pay.
- 4) Tax payments should be received and properly recorded.
- 5) Delinquent taxpayers should be forced to pay their liabilities.



Work has not begun on the operational aspects of administering the proposed property taxes in Armenia.

## VIII. PUBLIC INFORMATION AND ASSISTANCE

Successful implementation of the new taxes on property will require public acceptance and cooperation. Efforts to secure this acceptance should occur at all levels of the tax administration. Property tax administration should be viewed as a public service function. The chief service is an equitable assessment. The tax administration should demonstrate at every opportunity that the tax is being enforced even-handedly.

Policy makers and tax administrators must communicate effectively their publics--homeowners, business people, and government officials. The rationale for the tax, how it is administered, and taxpayers' rights and responsibilities must be explained.

Taxpayers should feel welcome in the offices of the property tax administration and be reassured that the tax administration is sincerely interested in their needs. Many taxpayers will need individual service, whether help with an exemption application, an explanation of an assessment, or a request for real estate data. Property tax administrators can expect to receive many such requests for information and assistance. Systems and procedures need to be established to satisfy these requests effectively and efficiently. Individual inquiries should be answered. Records should be open--available for public inspection--unless confidential information is involved.

The public cannot be assumed to have a good understanding of property taxation and tax administration. Having a publication that explains these things is an excellent tool to use in a public education program. Tax administrators also should anticipate that some taxpayers will be angry, and the staff should be trained to diffuse or deflect anger and provide the service needed.

An accessible, effective appeal process is crucial to the success of the property tax. In property taxation, in contrast to other taxes where administrators audit the assessments of taxpayers, taxpayers use the appeal process to audit the work of the tax administration. It is important that access to the appeal process be convenient and inexpensive, at least at the initial stages, with later stages

reserved for more complex appraisal and legal problems, where expert assistance may be necessary.

The Armenian Urban Research Institute has recognized the need for education in democratic legal rights and responsibilities. Work on developing public information and assistance programs cannot begin until the organizational structure has been put into place.

## IX. COMPUTER TECHNOLOGY

Modern cadastral record, mass valuation, and property tax administration systems require computer technology. Therefore, Armenian systems should be developed with computerization at least eventually in mind. In preparation for such developments, an evaluation of available computer technology and computer readiness was made. The next step would be to define system requirements, and section A is intended to illustrate the possibilities.

### A. OVERVIEW

Western property tax administrations use computers extensively. Recent technological advances and cost reductions have made computer systems available to the smallest tax agencies. Computer systems help with administration and with valuation--the latter type of system being called a computer-assisted mass appraisal (CAMA) system.

#### 1. System Components

Computer-assisted valuation systems can be viewed as having four broad, integrated subsystems: data management, sales processing and analysis, mass valuation, and administration. The data management system supports data storage, maintenance, and retrieval. The sales management system provides for sales processing, analysis, and ratio studies. The valuation system comprises mass valuation applications of the three approaches to value. The administrative system provides for such functions as preparation of valuation and tax rolls, notices, project management, forms generation, and exemption and appeals processing. It also interacts with other systems particularly tax billing and collection systems.

The database management system is key. Database management systems combine data into an integrated structure independent of its physical location. This means that the database and application programs can be independently maintained. Data redundancies and inconsistencies can be eliminated. Query and analytical capabilities are enhanced.

The database management system also permits interactions among the subsystems. For example, the valuation system uses data maintained in the data management and sales processing

systems and produces values used in the administrative system to generate assessment notices. Thus, tax administrators must not only ensure that the various systems perform effectively but also that they are well integrated. System security and integrity is another important managerial concern.

Increasingly, valuation and tax administration systems are being linked to geographic information systems (GIS) and electronic document management systems. These provide access to digital maps and images of documents. A geographic information systems has many applications in valuation. For example, a valuer can display sales and other selected data on maps tailored to the valuer's needs. On a more advanced plane, the marriage of CAMA and GIS systems permits global response surface analysis of land values. Of course, use of a GIS requires that parcel boundaries or parcel centroids be digitally encoded, a time-consuming and expensive venture.

## 2. System Development Strategies

Computer systems must be supported by adequate hardware. Insufficient storage or processing power delays operations, curtails analyses, and wastes time. Fortunately, hardware and storage costs have fallen rapidly. This does not mean that administrators should rush to acquire more powerful computers. Instead, they should determine functional requirements, select software that will effectively meet those requirements, and only then evaluate hardware alternatives. Hardware should be evaluated on the basis of capacity and reliability, availability of maintenance service, and ease of upgrading. Experienced data processing managers should help make acquisition decisions.

Recent advances in performance/price ratios for personal computers (PCs) and in client-server technology make PCs an increasingly attractive option. Personal computers are attractive for such functions because they give the user full hardware control, which means quicker access while freeing more mainframe time for larger jobs. Small offices can use PCs for all their systems. Large office can use them to support specific functions, such as project scheduling, and to enhance market analysis and modeling. Also, PC software tends to be more flexible, easier-to-use, and cheaper.

Tax administrators have several broad options in application software selection and development. One is to develop software internally. Most large offices initially chose this option. It has major advantages and disadvantages. On the positive side, the software will meet the office's specific requirements. Another is that the office can use its own programming staff and is not dependent upon outside parties for revisions and support. On the negative side, internal software development requires large commitments of time and staff. Developments can take years to complete with no guarantee of success. Documentation must be prepared and maintained, which is time-consuming and, in practice, often inadequate. In addition, program revisions are periodically required, and tax administrations sometimes must compete with other departments for limited programming resources.

The second option is to acquire special purpose software from a vendor. This option is attractive if there are available systems that can be modified to meet most of the user's requirements. On the negative side, this approach can be costly and makes the user heavily dependent upon the vendor for future revisions and support.

Third, offices can build a system from general purpose or "generic" software components to meet their requirements. Database managers are examples of generic software. Other examples include, geographic information systems (GIS), statistical packages, spreadsheets, and word processors. Statistical packages are excellent for valuation modeling and can be adapted to sales analysis and other analytical applications. Spreadsheets are excellent for income data analysis. Smaller offices can develop their entire systems with generic software. In fact, an integrated package (with database, spreadsheet, word processing, and graphics capabilities) may be all that is needed. A disadvantage of this approach can be dependence on the individual that put the system together.

Of course, a tax administration is not restricted to a single approach. Unless the office is acquiring a complete system from a vendor, it should acquire a database manager, whether it be at the mainframe or PC level. Valuation software can come from several sources. Cost approach applications and land valuation systems can be designed in-house or with the aid of generic software. Software to support the market approach can be purchased from a mass appraisal vendor, or a generic statistics package can be used.

Larger offices may use a variety of tax administration software.

In view of continuing technological advances, generic software is becoming increasingly attractive relative to internal development. This means that offices can increase their efficiency and analytic capabilities by migrating toward more generic solutions. In this environment, the role of data processing departments is being redefined, with less emphasis on custom programming and more on systems integration, data management, and user education and support.

#### B. THE CURRENT SITUATION IN ARMENIA

The current situation with respect to computer technology in Armenia is mixed. On the negative side, frequent power interruptions create problematic environmental conditions. Unreliable telecommunication systems also constrains some computer applications. In addition, computer hardware available to government bodies seems to be in short supply--limited to a few PCs. These problems can be solved with capital investments.

A spokesman for the Aragast B Corporation, a "full service" computer company, saw two additional challenges. An appropriate legal framework was needed. More important, managers of institutions were needed who appreciated the value of computer technology and would provide leadership toward computerized solutions.

On the positive side, Armenia was a center for computer science during the Soviet era, and the [Computer Research Institute of Yerevan] is still active, although smaller in size. Consequently, there is a pool of computer-literate people. In addition, the work of private firms like the Aragast B Company and institutions like the Scientific Research Center of City Management Systems suggest sufficient potential for computerization.

People in these organizations are abreast of the state-of-the-art in generic software (including databases, electronic document management systems, geographic information systems, computer-assisted drafting, spreadsheets, statistical packages, and the like). In addition, skilled system designers and programmers are available to develop software internally.

The Scientific Research Center of City Management Systems is developing PC systems for the building inventory and housing maintenance departments of Yerevan. These automate the alphanumeric data in passports and licenses. They should improve access to data while also increasing data security. The building maintenance system was due to be installed in August on two PCs. The license system was said to have been installed and that 10-15 percent of data had already been entered. (No mention was made of this system during my visit to the building inventory office.)

The center also is developing a personal information system. It contains information on where people live and the characteristics of their living quarters. It is envisaged that the system will be useful in apartment exchanges, simplifying the information that must be submitted to the government, among other applications.

The center also has a demonstration version of a rudimentary GIS, the "Kaghak" (city) Automated Information System. It displays five layers of data spatially using symbols. The Aragast B Company is developing multi-media systems.



## X. IMPLEMENTATION PLANNING

The implementation of new tax systems will require careful planning. There is little evidence that such planning has begun. Given the desire to implement the proposed property taxes quickly, implementation planning should begin as soon as possible. The plan should address the following:

- ! Establishing Legislation
- ! Marshalling Resources
- ! Designing Systems and Procedures
- ! Training
- ! Data Collection
- ! Valuation
- ! Public Information
- ! Ongoing Administration

Substantial progress has been made only in drafting legislation. Follow-up missions could assist with the remaining areas.

Regarding the general timetable for implementation, an effective date for the proposed property tax legislation has not been set. The Armenian Urban Research Institute believes five-to-six years would be required to implement the urban land cadastre (at a current cost of \$10 million). That probably is an ambitious timetable, but the State Tax Inspectorate believes the country cannot wait four or more years while the law and systems are being perfected to implement the new taxes. That is the fiscal and political reality. I would argue that one to two years would be required to implement a minimal, interim system successfully.

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Alexander Chakhmakhchian, Director, Institute "Yerevan-project."

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Annex B. CREATING PROPERTY TAX SYSTEMS: SEMINAR OUTLINE

INTRODUCTION

Goals of Property Tax Systems

- ! Revenue
- ! Reinforce development of market economy & democratic government

Types of Property Taxes

- ! Land and building taxes
- ! Transfer taxes

Concept of "Property"

Property Tax System Components

- ! Administration
- ! Levy
- ! Assessment
- ! Collection

MAIN POLICY CHOICES AND LEGISLATIVE FRAMEWORK

Fiscal Objectives

- ! Revenue amounts
- ! Recipient(s) of revenue

Coverage of Tax

- ! Real property (land and buildings)
- ! Personal property

Basis of Tax

- ! Non-Value
- ! Value (capital and annual)

Level of Tax

- ! Uniform

! Differential levels (assessment ratio and rate differentials)

Exemptions and Reliefs

Definition of Taxpayer

! Owner  
! Occupant or user

Liability for Tax

! In Rem  
! In Personam

Basis of Levy (Determination of Tax Rates)

! Fixed rates  
! Variable rates

#### ADMINISTRATIVE ORGANIZATION

Tier of Government Responsible for Administration

! National  
! Local  
! Mixed

Private Sector Role

Self-Assessment

Coordination

#### DEVELOPMENT OF CADASTRES

Organization

! Geographic  
! Person  
! Indexing (numbering) systems

Legal (Juridical) Cadastre

Fiscal Cadastre

- ! Land
- ! Buildings
- ! Personal property
- ! Economic data (sales prices, etc.)

## VALUATION

Market Monitoring and Preliminary Analyses

Valuation Models & the Approaches to Value

- ! Sales comparison
- ! Income capitalization
- ! Cost

Land Valuation

Valuing with Insufficient Market Data

Quality Assurance

## TAX ADMINISTRATION

Billing

Collection

Enforcement

Accounting and Distribution of Receipts

## PUBLIC INFORMATION AND ASSISTANCE

Building Voluntary Compliance

Appeals

## TECHNOLOGY

Hardware Platforms

Software Options

CAMA Systems

## MULTI-PURPOSE GEOGRAPHIC INFORMATION SYSTEMS

IMPLEMENTATION PLAN (TIMETABLE)

Establishing Legislation

Marshalling Resources

Designing Systems & Procedures

Training

Data Collection

Valuation

Public Information

Ongoing Administration

Annex C. MATERIALS REVIEWED

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