FISCAL DECENTRALIZATION AND TAX SHARING IN TRANSITION ECONOMIES

by

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Abstract

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It is usually admitted that fiscal decentralization may have different outcomes, both positive and negative. The exact set of outcomes depends on the arrangement of intergovernmental relations. One of the central elements of intergovernmental finance in transition economies is the system of tax sharing. This paper investigates how the system of tax sharing affects the outcomes from the process of fiscal decentralization in transition economies. It tries to show that tax sharing may lead to biased tax collection. A number of policy recommendations on how to rectify the situation are proposed and weighted in the context of Ukraine.

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GLOSSARY

Technical terms

Conditional grants – grants accompanied by stipulations imposed by grantor governments as to how revenues are to be spent by recipient governments.

Consolidated budget – total budget of public sector that is obtained by combining budget of central government and budgets of local governments.

EPT – Enterprise Profit Tax

Execution ratio – a measure of the degree to which tax collection plans are fulfilled; it is calculated as actual tax receipts as a percentage of planned receipts.

Fiscal decentralization – a transfer of political, fiscal, and administrative powers to subnational units of government.

Fiscal Federalism – a situation when fiscal decisions are made at different levels of a government. The economic theory of fiscal federalism describes how the different economic functions of government are matched with the level of government best equipped to carry them out efficiently.

Horizontal imbalance – a situation when own taxing capacities of various subnational levels of governments of the same level differ.

Intergovernmental competition – a fiscal structure characterized by many competing governments (Marlow, 1995).

Intergovernmental grants – grants flowing from one government (grantor) to another government (recipient).

Intergovernmental relations – fiscal relations between various levels of government power.

Intergovernmental transfers – transfers between different levels of government. Include grants and revenue sharing.

Local budgets – budgets of subnational administrative units. In Ukraine – budgets of oblasts, cities of Kyiv and Sevastopol, raions, towns and villages.

Local public good – public good locally provided for the benefit of a local community and financed largely out of local taxation; a spatially limited public good

PIT – Personal Income Tax.

Public good – a commodity or service which is available to everyone in a particular area, cannot be withheld from non-payers and is "non-rival", i.e. one person's consumption does not diminish that of others (Rutherford, 1995).

Revenue sharing – the division of the revenue from federal or central government taxes with the state, country or local governments (Rutherford, 1995, 396).

State budget – budget of the central government.

Tax sharing – sharing of revenues generated by a certain tax (or taxes) among different levels of government

Tax wars – competitions between (or among) two or more governments on the basis of lowering taxes (Marlow, 1995).

Tiebout model – a demonstration of inter-jurisdictional mobility whereby taxpayers search for desirable packages of government programs.

Transition – the replacement of one economic system by another. Here replacement of the administrative-command economy by markets.

Unconditional grants – grants carrying no restrictions on the ways in which revenues are to be spent by recipient governments.

VAT – Value Added Tax

Vertical imbalance – a situation when own revenue falls short of spending at a particular level – or unit – of government.

Non-English terms

Oblast (Îáëàñòü) – subnational administrative units in Ukraine. There are 24 oblasts in Ukraine. Each oblast is divided into approximately two dozens of raions.

Oblast Rada (Îáëàñíà Ðàäà íàðîäíèõ äåïóòàò³â) – the Parliament of an oblast

Raion (ðàéîí) – administrative subdivision of oblast.

State Treasury of Ukraine (Äåðæàâíà Êàçíà÷åéñòâî Óêðà¿íè) – governmental organization that is responsible for management of budget funds in Ukraine.

Verkhovna Rada (Âåðõîâíà Ðàäà Óêðà¿íè) – the Parliament of Ukraine.

Chapter 1

INTRODUCTION

The economist's central concerns are the allocation of resources and the distribution of income within an economic system. The structure of government is of interest for him because it carries implications for patterns of resource use and income distribution. From this perspective, decentralization of the public sector is of importance because it provides a mechanism through which the levels of provision of certain public goods and services can be fashioned according to the preferences of geographical subsets of population (Oates, 1990, 563).

Fiscal decentralization entails the transfer of political, fiscal, and administrative powers to subnational units of government. Decentralization may involve bringing such governments into existence. Or it may consist of expanding the resources and responsibilities of existing subnational governments (World Bank, 2000, 108).

The theory of fiscal decentralization implicitly assumes institutional arrangement that is common for well-functioning market economies. This paper attempts to adapt the general framework of fiscal decentralization to the peculiarities of transition economies.

It is usually admitted that fiscal decentralization may have different outcomes, both positive and negative. For example, it may result in efficiency gains, because local government's proximity to the people makes it more responsive to citizens' preferences than the central government. Or, it may lead to more uneven income distribution in the society, when each locality decides on taxing of wealth and spending on the poor people. The exact set of outcomes from decentralization depends on the arrangement of intergovernmental relations. One of the central elements of intergovernmental finance in transition economies is the system of tax sharing. This paper asks how the system of tax sharing affects the outcomes

from the process of fiscal decentralization in transition economies. In other words, what are the outcomes from fiscal decentralization in the presence of tax sharing? The paper tries to show that tax sharing, along with other effects, leads to biased tax collection. In particular, when sharing rates are different for different taxes, there may be smaller incentives to collect taxes that go mostly to central government and greater incentives to collect those taxes that go mostly to local budgets.

This paper is organized as follows. Chapter 2 presents a simple textbook version of the fiscal decentralization theory. This theory is a useful guide to the outcomes of fiscal decentralization one would expect in any country. I describe in detail reasons for fiscal decentralization as well as tradeoffs between centralization and decentralization. In particular I describe efficiency gains due to decentralization using the Wallace Oates' decentralization theorem accompanied by graphical analysis. The efficiency gains are then further discussed in the context of consumer mobility and Tiebout theory. Other positive outcomes of decentralization are innovation and experimentation due to regional competition and possibility of achieving more optimal level of public output. The tradeoffs of fiscal decentralization include inter-regional externalities, tax wars, tax system inefficiency, problems with income redistribution, inability to explore the benefits of economies of scale and smaller capability of central government to carry out stabilization policies.

In chapter 3 I turn to transition economies. I describe the system of intergovernmental relations in these countries with focus on Ukraine. Special attention is paid to the system of tax sharing. In particular, I describe which taxes are shared, how sharing rates are determined, what is the relative importance of shared taxes for the revenues of communities. Also, I provide examples on how tax sharing is used in several other transitional countries – FSU countries, Poland, Czech Republic, Slovak Republic, Hungary, and China.

In chapter 4 I present a number of effects that are likely to take place when tax sharing is used to provide decentralized jurisdictions with revenues. In particular, tax sharing may

prevent tax wars, promote efficiency of tax system, allow exploring economies of scale in tax collecting, and promote vertical equity. However, it is also likely to lead to local overspending, eliminate the ability of citizens to choose regional tax rates through freedom of movement between local governments and create an incentive for biased tax collection in favor of those taxes that go mostly to local budgets. Then the attention is focused on the latter effect. I explain the mechanism of biased tax collection due to differences in tax share using a theoretical contribution of Wayne Thirsk (1999). Then I provide empirical evidence in favor of the existence of biased tax collection in Ukraine using data on tax collection over the period of 1995-1999.

Chapter 5 is devoted to the discussion of available policy actions that may be used to eliminate biased tax collection in the context of Ukraine. Two actions are likely to bring positive results. First, it would be wise to introduce a system when all shared taxes are shared at the same rate within a region. This would eliminate the basic incentive for biased tax collection. Second, a switch to the system of intergovernmental grants and usage of unconditional grants as a mean of eliminating vertical imbalances instead of tax sharing would also remove incentive for biased tax collection.

Concluding section (Chapter 6) enumerates major findings of the paper, highlights policy recommendations and specifies issues for further research.

Chapter 2

THEORY OF FISCAL DECENTRALIZATION

Decentralization is a term that originally appeared in the literature on comparative economic systems. It is defined as a shifting of decision-making authority and responsibility from upper to lower levels. (Gregory and Stuart, 1999, 78). It is also possible to use the definition proposed by Oates (1990, 563): decentralization is possession of independent decision-making power by decentralized units.

Fiscal decentralization is a more narrow term; it refers to the decentralization of public sector. Fiscal decentralization entails the transfer of political, fiscal, and administrative powers to subnational units of government. A government has not decentralized unless the country contains autonomous elected subnational governments capable of taking binding decisions in at least some policy areas. Decentralization may involve bringing such governments into existence. Or it may consist of expanding the resources and responsibilities of existing subnational governments. The definition encompasses many variations. India, for example, is a federal state, but the central government has considerable power over subnational governments. Political power in China is officially centralized, but subnational units have substantial de facto autonomy in what can be described as "decentralization Chinese style" (World Bank, 2000, 108)

Systems or structures of government differ in their degree of decentralization. A decentralized government is one for which a number of small autonomous governments join together to form a federation of states or governments. A central or federal government usually exists to coordinate the activities of the smaller local governments. The degree of decentralization varies with the amount of autonomy that local governments have over expenditure and tax decisions (Brown and Jackson, 1990, 261).

The public sector produces public goods, which are defined as commodities or services which are available to everyone in a particular area, cannot be withheld from non-payers and is "non-rival", i.e. one person's consumption does not eliminate that of others. Local governments usually provide local public goods, which are defined as public goods with benefits that are non-rival for a geographical subset on national population (Hyman, 1996). Local public goods are provided for the benefit of local community and financed largely out of local taxation. The provision of national public goods, which are defined as public goods that benefit the utility of all members in each community, is the responsibility of a central government.

Let us distinguish more formally between national and local public goods by writing utility functions for two individuals in different jurisdictions as $U_a=U_a(I_a, G, G_a)$ and $U_b=U_b(I_b, G, G_b)$ where "a" and "b" are regions; thus G is a "national" public good and G_a and G_b are local/regional public goods; I_a and I_b could be after-tax regional incomes in real terms.

What are the reasons for fiscal decentralization? In other words, what are the positive outcomes one would expect from fiscal decentralization? Wallace Oates (1990, 559) gives a profound answer to this question. First, decentralization offers the promise of increasing **economic efficiency** by providing a range of outputs of certain public goods that corresponds more closely to the differing tastes of groups of consumers. Second, it may result in greater **experimentation and innovation** in the production of public goods. Finally, there is some reason to believe that decentralization may lead to more **efficient levels of public output**, because expenditure decisions are tied more closely to real resource costs. The three following subsections discuss these reasons in more detail.

Efficiency gains

Consider, for example, a public good whose consumption is limited to the residents of the community in which it is provided. If provided by the central government, the most likely outcome would be similar levels of consumption of the good in all communities. However,

such uniform levels of consumption may not be efficient, because they do not take into consideration possible variations in the tastes of residents of differing communities. If, in contrast, each community had its own local government, one might expect variations in the level of provision of this public good across the different localities, variations that would, to some extend at least, reflect the differences in tastes of the constituencies of the communities (Oates, 1990, 559).

The welfare gains from decentralized public choice are shown in figure 1. In this simple illustrative example, provided by Brown and Jackson (1990, 262) the population is divided into two groups. For ease of exposition, assume that the demand curve for the public good is identical for all individuals in each of the groups but that demand differs between the two groups. Thus each individual in group 1 possesses demand curve D_1 and each person in group 2 has demand curve D_2. Assume that the public service is supplied at a constant cost per head. The preferred level of output for people in group 1 is Q_1 and for group 2 is Q_2.

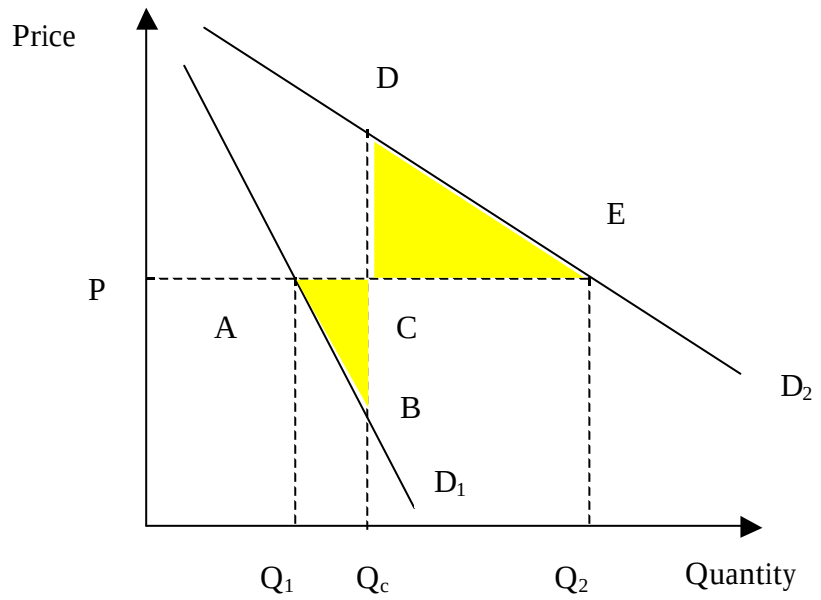

Figure 1. Efficiency gains due to decentralization

Source: Brown and Jackson, 1990, p. 262.

In a system of centralized government a single uniform level of public service would be provided, say Q_c. Given this level of output, the welfare loss to group 1 individual is shown as the shaded area ABC. This represents the excess costs to each individual over his valuation of the excessive units of consumption (Q_1Q_c). The welfare loss to group 2 individual is given as the area CDE. In the former case Q_c is excessive and in the latter case it is too little. This is the essence of Oates's decentralization theorem (Brown and Jackson, 1990, 263).

The possibility for welfare gains through decentralization are further enhanced by the phenomenon of consumer mobility. As Charles Tiebout (1956) has argued, in a system of local government, a consumer can to some extent select as his place of residence a community that provides a fiscal package well suited to his preferences. One can envision a system of local governments where, for example, each community provides a different level of consumption of a local public good and in which the consumer by "voting with his feet" selects the community that provides the level of public output that best satisfies his tastes. Through this mechanism one can get a sort of market solution to the problem of producing efficient levels of output of some public goods. A decentralized form of government thus possesses the advantage of allowing various levels of output of certain public goods, by means of which resources can be employed more efficiently in satisfying the preferences of consumers (Oates, 1990, 560).

Experimentation and innovation

With a large number of independent producers of a good, one might expect a variety of approaches (for example, varying techniques of instruction in local public schools) that, in the long run promises greater technical progress in modes of providing these goods and services. Closely connected to this point are the competitive pressures that result from an enlarged number of producers; such pressures will tend to compel the adoption of the most efficient techniques of production. If, for example, public officials in one community have

discovered a particularly effective way of providing a certain service, the governments of neighboring jurisdictions will be compelled to adopt similar techniques of production in order to avoid serious criticism from local residents. In contrast, if a single central government provides all public goods with no competitors, one might expect the forces inducing innovation and efficiency to be less strong. A system of local government may thus promote both static and dynamic efficiency in the provision of public goods and services (Oates, 1990, 560).

More efficient level of public output

If a community is required to finance its own public program through local taxation, residents are more likely to weigh the benefits of the program against its actual cost. In contrast, if funds for local public projects come wholly from a central government, residents of a given community have an incentive to expand levels of local public services as far as possible, since they may bear only a negligible part of the costs of the program. Thus, a system of local government may provide an institutional setting that promotes better public decision-making by compelling a more explicit recognition of the costs of public programs (Oates, 1990, 561).

However, fiscal decentralization usually brings new problems and distortions that may even eliminate welfare gains. These include intergovernmental externalities, tax wars, tax system inefficiency, problems with redistributive programs, and other. The following subsections show that there are many tradeoffs between centralization and decentralization.

Externalities

In many situations local public goods (or publicly provided private goods) purchased by one community may affect the utility levels of people in other communities. Inter-jurisdictional externalities arise when governments fail to fully account all costs or benefits imposed on

citizens of other governments (Marlow, 1995, 593). If one town provides good public education for its young people and some of them eventually emigrate, then members of other communities may benefit from having a better-educated work force. Or if one town's sewage-treatment plant pollutes a river that passes by other communities downstream, people in the downstream communities are made worse off. Another example is local law enforcement. Externalities may spill over to other communities when local governments provide vastly different levels of local law enforcement. When criminals are mobile and sensitive to differential enforcement of local laws, criminals tend to migrate to those government jurisdictions with low law enforcement and, in this way, high-enforcement jurisdictions export crime to low-enforcement jurisdictions (Marlow, 1995, 593). In short, communities impose externalities (both positive and negative) on each other. If each community cares only about its own members, these externalities are overlooked. Hence, an inefficient allocation of resources results (Rosen, 1992, 534).

Tax wars

A federal system may promote tax wars whereby state and local governments compete with one another on the basis of tax burden. Tax wars have been argued to result in sub-optimal tax collection. When governments are fearful of losing businesses and citizens to governments that impose lower tax burdens, they may set tax rates lower than what is required for high-quality public programs. When only one government exists, no other governments compete, and policymakers can therefore set higher interest rates, enabling a higher level of public spending (Marlow, 1995, 594).

Tax wars usually lead to some Nash equilibrium that is non-optimal. Let us consider a situation when two jurisdictions can choose between low and high tax rate. It can be seen from table 1, which is for illustrative purposes, that in Nash equilibrium both communities chose to set low tax rates. As a result, both communities obtain lower payoffs (taxes collected) as compared with the case when tax rate is high and equal for all communities.

Table 1. Nash equilibrium under tax wars.

		Community 2	
		Low tax rate	High tax rate
Community 1	Low tax rate	**40, 40**	80, 0
	High tax rate	80, 0	50, 50

Tax system inefficiency

Before talking about decentralization as a source of tax system inefficiency, let me define the concept of excess burden and describe briefly how inefficiency caused by taxes can be reduced. The total excess burden of a tax is an additional cost to society over and above the amount of money that citizens pay in a tax. The excess burden of a tax is the loss in net benefits from private use of resources that results when a price-distorting tax prevents markets for taxed goods and services from attaining efficient output levels. When the excess burden is positive, the total burden of a tax on buyers and sellers in a market exceeds the tax revenues collected. The total excess burden of a tax sometimes is called a deadweight loss. It is a loss in efficiency that cannot be regained even if tax revenues collected provide benefits equal in dollar amount paid by citizens in taxes.

The value of excess burden depends on elasticities of product's supply and demand. The excess burden of a tax would be zero if either the demand or supply of a tax product were perfectly inelastic (Hyman, 1996, 371). Other things being equal, the loss in well-being from the excess burden of a tax is greater the more elastic the demand for the good (see illustration on Figure A3 in Appendix). Similarly, other things being equal, the greater the price elasticity of supply, the greater is the loss due to the excess burden of a tax.

Roughly speaking, efficient taxation requires that inelastically demanded or supplied goods be taxed at relatively high rates and vice versa. Instead, communities are likely to select taxes on the basis of whether they can be exported to outsiders. For example, if a community has the only coal mine in the country, there is a reasonable chance that the incidence of a locally imposed tax will fall largely on coal users outside the community. A coal tax would be a good idea from the community's point of view, but not necessarily from the viewpoint of the nation (Rosen, 1992, 535).

An important implication of tax shifting is that communities may purchase local public goods in inefficiently large amounts. Efficiency requires that local public goods be purchased up to the point where their marginal social benefit equals marginal social cost. If communities can shift some of the burden to other jurisdictions, then community's perceived marginal cost is less than marginal social cost. The result is an inefficiently large amount of local public goods (Rosen, 1992, 536).

Income redistribution

Citizen mobility thwarts the ability of local governments to transfer income from the "rich" to the "poor". Transfer policies are self-defeating since when one local government transfers income, the poor tend to enter its jurisdiction as the rich leave. Exiting by rich citizens therefore lowers the ability to transfer income since, in an area with a now-smaller tax base, the more generous, transfers may raise the percentage of citizens who are entitled to transfers. Even when citizens care only about the welfare of poor citizens residing within their own community, lower than optimal levels of transfers have been shown to occur under a federal system (Marlow, 1995, 594)

Economies of scale

When goods and services are characterized by economies of scale, average costs drop with output expansion. Just as large firms may produce goods at lower per unit costs because of economies of scale, so may large governments provide public goods at lower per unit costs than smaller governments (Bruce, 1998, 152). As long as average costs continue to fall with greater production, it is cheaper to have one large government, rather than two or more smaller governments, produce goods and services. One reason a higher level of government may have such economies of scale is that duplicative administrative costs of having several smaller lower-level governments are avoided. Centralization of government can therefore exploit economies of scale, in theory resulting in cost saving that flow to taxpayers (Marlow, 1995, 590).

One government function that is likely to have economies of scale is collecting taxes. Higher levels of government are usually able to collect taxes at lower administrative costs. The lower costs reflect the elimination of duplicative tax administration facilities and the fact that higher levels of government have lower enforcement costs because taxpayers cannot escape taxes by moving to another jurisdiction (Bruce, 1998, 152).

Macroeconomic stability

Fiscal decentralization can entail costs in terms of the central government's ability to carry out effectively its traditional macroeconomic management function. For example, a loss of major tax instruments or of control over a large share of public expenditure can severely constrain the room for maneuver of the central government in e.g., raising taxes or cutting spending to curb an overheated domestic demand (Ter-Minassian, 1997a).

According to the World Development Report of 1999/2000, decentralization, if handled poorly, can threaten macroeconomic stability. Fiscal decentralization reduces the central government's control over public resources. The government of the Philippines, for example,

is required to share nearly half its internal tax revenue with subnational governments, limiting its ability to adjust the budget in response to shocks. Deficit spending by local governments can also thwart central government efforts to cool the economy by restraining public expenditure. When revenues are decentralized before expenditure responsibilities, central governments are forced to maintain spending levels with a smaller resource base. The result – seen in many Latin American countries – is large central government deficits. More generally, separating taxing and spending powers allows subnational governments to incur only a fraction of the political and financial costs of their expenditures, especially when most local resources are funded out of a common national pool of tax revenues. The threat of macroeconomic instability is a serious issue only in countries where subnational governments control substantial resources—usually, large federations or very decentralized wealthy countries. But even in these cases the evidence connecting decentralization and macroeconomic instability is mixed. Several studies suggest that decentralization has not undermined stability in the United States or in Western European countries. In Latin America subnational governments' contribution to the national deficit was negligible in most countries, except federal ones (World Bank, 2000, 111).

Chapter 3

TAX SHARING IN TRANSITION ECONOMIES

The collapse of the institutions of central control within the transitional economies of Eastern Europe and the NIS, on both the political and economic levels, has resulted in a growing impetus for the devolution of fiscal authority from central to regional and local governments. However, even at the central level, few states have developed clear procedures for revenue collection and budgeting that are appropriate for economies driven by the private sector (Guess, et al.). Also, transition economies inherited the system of intergovernmental finance from the old administrative command system. One of the elements that have been kept untouched is the system of tax sharing. In this chapter I describe institutional framework, intergovernmental relations and the practice of tax sharing in transition economies with the case study of Ukraine.

Levels of government in Ukraine

There are four levels of government in Ukraine:

- central
- oblast, Crimean AR, Kyiv, Sevastopol
- raion
- towns and villages

According to official terminology, budgets of oblasts, Crimean AR, Kyiv, Sevastopol, raions, towns and villages are called local budgets. However, sometimes oblasts, Crimean AR, Kyiv and Sevastopol are referred to as middle level in three level structure of government.

Assignment of expenditure responsibilities to levels of government in Ukraine

According to the law "On the Budgetary System" (1991), the central government is responsible for national programs in social protection, education, culture, youth policy, science, health care, sport, construction, geological search, defense, environment protection, law enforcement, foreign policy and others. Central government is also responsible for maintaining institutions of central governing, such as the parliament, Presidential administrations, Cabinet of Ministers and central courts.

Local governments are responsible for local programs in social protection, education, culture, science, sport, youth policy, and environment protection. Local governments are also responsible for maintaining institutions of local governing and organizations that perform industrial and economic activities such as construction, transportation, utilities, etc.

Assignment of functions to the central and local governments in the period since 1995 was unstable. Indeed, functions were assigned every year when passing the state budget by way of negotiation.

Tax assignment by level in Ukraine

According to the law "On the system of taxation in Ukraine" (1991), there are thirty-nine taxes and fees in Ukraine. Sixteen of them are essentially local taxes and fees: local administrations are able to change the tax rate, all revenues generated by these taxes and fees within the geographical bounds of an oblast are automatically counted as revenues of this particular oblast (see table 2).

The other twenty-three taxes and fees are centralized: Verkhovna Rada sets their rates, which are the same for all parts of Ukraine. The revenues generated by the centralized taxes and fees are used to finance state budget expenditures as well as to eliminate horizontal and vertical imbalances.

Table 2. Taxes and fees in Ukraine

Source: The law of Ukraine "On the system of taxation in Ukraine", 1991.

Centralized	Local
1) value added tax; 2) excise tax; 3) enterprise profit tax; 4) personal income tax; 5) duty; 6) state duty; 7) real estate tax; 8) land tax; 9) rent payments; 10) vehicle tax; 11) trade tax; 12) fee for geologic survey; 13) fee for special use of natural resources; 14) environment pollution tax; 15) Chornobyl tax; 16) social insurance fee; 17) contribution to Pension Fund; 18) contribution to Innovation Fund; 19) trade license; 20) agricultural tax; 21)tax for development of wine-growing, horticulture and hop-growing; 22) stamp duty ; 23) cross-border tax.	1) advertising tax; 2) communal tax; 3) hotel fee; 4) parking fee; 5) market fee; 6) fee for issuing appartment order; 7) resort fee; 8) hippodrome run fee; 9) hippodrome win tax; 10) betting duty; 11) fee for using local emblems; 12) fee for film and TV shooting; 13) local lottery fee; 14) fee for crossing near-border oblasts; 15) fee for siting trading or service facility; 16) tax on dogs.

Tax sharing and intergovernmental transfers in Ukraine

According to Gonciarz (1999, 94), depending on how revenues and expenditures will be assigned, smaller or greater vertical and horizontal imbalances within national intergovernmental finances will arise. A vertical imbalance occurs when own revenue falls

short of spending at a particular level – or unit – of government. A horizontal imbalance occurs when own taxing capacities of various subnational levels of governments of the same level differ. The difference will have to be made up by transfer and borrowing mechanism. Two basic ways of transferring revenues from one level of government to another are sharing of revenues and a system of grants. The need for tax sharing between various levels of government emerges when the subnational governments are assigned only few minor taxes that do not provide sufficient means to finance the significant responsibilities these governments are charged with.

In Ukraine local taxes and fees generate only about 3 % of required revenues to finance local expenditure programs (Pynzenik and Fishko, 1999; also see table A7 in Appendix that shows Revenues of Local Budgets over 1996-1998). In order to provide local governments with resources that would be sufficient to deliver local expenditure programs, central government allocates a part of revenues generated by centralized taxes to oblast governments. This is done in two ways. The first way is to give non-matching grants to local budgets and treat them as an expenditure of the central budget. The second way is to allow local governments to keep a part of the revenues generated by a centralized tax within the territory of their jurisdiction. That is, to share revenues generated by a tax between central and local governments.

The bulk of local revenue come from what are called “regulated” taxes or “shared taxes”. “Regulated” taxes consist of four of the key tax bases in the country, the value-added tax (VAT), the enterprise profit tax (EPT), the personal income tax (PIT), and the excise tax (Thirsk, 1999, 69). It can be seen from table A7 in Appendix that such taxes provide the largest share of local revenues.

It is important to note that in principle any centralized revenue base can be shared between the central and local sectors of the government. Indeed, apart from VAT, EPT, PIT and excise tax, many other taxes are shared in Ukraine, for example, vehicle tax, timber tax, water fees, land tax, etc. (Wetzel, 1999).

There are great differences among regions in Ukraine. Industry and resources are distributed unevenly. Most of production is concentrated in south and east regions. These regions are also rich in mineral resources. Kyiv, the capital city of Ukraine, is the place where many foreign financial and trading companies are registered. Odesa, the major port city in Ukraine, is a channel for the lion's share of foreign trade. However, western and northern oblasts depend primarily on agriculture.

Table 3. Average monthly wages of workers and white-collar employees, by region, Hr.

Source: State Statistics Committee of Ukraine.

	1995	**1996**	**1997**	**1998**
AR Crimea	70	118	134	143
Vinnitska	58	100	112	115
Volinska	53	90	103	105
Dnipropetrovska	91	159	179	189
Donetska	97	158	180	195
Zhitomirska	61	102	114	118
Zakarpatska	50	86	100	108
Zaporizska	84	146	163	183
Ivano-Frankivska	65	105	116	120
Kyivska	78	136	155	161
Kirovogradska	58	103	114	119
Luganska	82	132	151	163
Lvivska	62	107	122	132
Mikolaivska	68	116	131	145
Odeska	66	117	134	146
Poltavska	76	130	142	150
Rivnenska	61	105	117	120
Sumska	66	115	127	130
Ternopilska	53	90	102	104
Kharkivska	72	127	149	159
Khersonska	59	102	120	125
Khmelnitska	55	95	109	114
Cherkaska	63	11	122	127
Chernivetska	55	94	108	106
Chernigivska	57	104	116	122
Kyiv	100	177	215	247
Sevastopol	83	137	153	159
Ukraine (weighted average)	73	126	143	153

The government takes the differences among regions into account when establishing a ratio according to which tax revenue is split between central government and each of the oblasts. That is why the share of a regulated tax that is given to regions varies across oblasts. Poor oblasts with little revenue sources tend to obtain large shares of a regulated tax (up to 100% of revenues collected within the territory of such oblast) whereas rich oblasts usually are allowed to keep only a small fraction of revenues collected on their territory.

There is no specific formula to determine the amount of funds required by a particular oblast. The ratios at which regulated taxes revenues are split between an oblast and the central government are proposed by the Ministry of Finance and approved by the Parliament on the yearly basis.

Within a single oblast, the share may vary across the four regulated taxes. In other words, the government and the Parliament decide on the sharing of each tax individually, regardless of sharing of other taxes.

Transfers of shares of "regulated" tax collections in Ukraine are made without conditions – they are not related to specific expenditure functions. Also, the tax sharing arrangement does not require matching by subnational governments and is open-ended in nature.

Tax sharing in Eastern Europe and China

Tax sharing is common for most Former Soviet Union countries. Revenue from the VAT, most excises, enterprise profit tax, and taxes on foreign transactions, and in the case of Russia, natural resource taxes, accrues to the national or federal government and is shared with subnational governments. In principle, the revenue split between national and subnational levels for each tax is to be determined by the national legislature according to regional need. In fact, however, revenue shares are often subject to intergovernmental negotiation or unilateral adjustments and to variation even in the course of the year (Kopits and Mihaljek, 1993, 169).

In 1988 in Poland turnover tax was split between central government and local governments (Hewitt and Mihaljek, 1992, 342).

In Hungary personal income tax was planned to be shared as an implementation of reforms carried out in 1990 (Hewitt and Mihaljek, 1992, 343).

In Czechoslovakia in 1992 (before the dissolution of the Chech and Slovak Federal Republic on December 31, 1992 into the Czech Republic and the Slovak Republic) revenue from the profit tax and the turnover tax – the two main taxes – was divided among the Federal Government, which received 35 percent of the total, and the Czech and Slovak Republics, which received 41.5 % and 23.5 % of the total, respectively (Prust, 1993, 54).

In China, local governments, mostly provincial and city governments, are in charge of collecting virtually all major taxes. The revenue is then shared upward with the next level of government. The sharing arrangements are not uniform, are subject to negotiation, and may vary from one case to another. Over the years, the revenue-sharing arrangements have undergone many changes, but, since the inception of the reforms in the late 1970s, the trend has been toward granting local governments more fiscal authority and allowing them to retain more revenue. (Blejer, 1993, 264)

However, a word of caution should be said here. The information about tax sharing in transition economies presented here may be out-dated. Countries permanently improve their system of intergovernmental relations and some changes are inevitable.

Chapter 4

EFFECTS OF TAX SHARING

General overview

Common sense and the literature suggest a number of effects of tax sharing.

First, under tax sharing expenditure decisions are not tied closely to real resource costs. Indeed, local spending may be increased not through greater tax burden on community members, but via obtaining larger share of centralized taxes that are paid by community members. Thus, residents of a given community have an incentive to expand levels of local public services as far as possible. As a result, decentralization is not likely to lead to more efficient level of public output. This idea is supported by Gonciarz (1999, 98) and Thirsk (1999, 73).

Second, tax sharing prevents “tax wars”. Indeed, communities cannot compete on the basis of lowering taxes because tax rates are set to be the same across a country. Also, taxpayers are not able to lower regional tax burdens by moving (or driving for commodities) to another region.

Third, the system of common shared taxes solves the problem of inefficient tax system that usually arises due to fiscal decentralization. The reason is that taxes are levied by the central authorities and that is why they are more likely to be efficient from a national point of vies than those levied by local governments. Also, under tax sharing taxes cannot be exported to outsiders. In other words, communities become unable to shift tax burdens to other jurisdictions.

Fourth, tax sharing allows exploring the benefits of the economies of scale in collecting taxes. If the central government can collect taxes at a lower cost than the state and local governments can, it is efficient for it to collect taxes from the residents of all jurisdictions and leave some funds in communities to be spent on local public goods.

Fifth, sharing of common taxes by communities rejects the prediction that that mobility of citizens within a federal system results in efficient government policies. That is, voting with your feet is not perceived to result in tax policies that better correspond to preferences of constituents. To explain this we should recall the Tiebout model that predicts that tax rates vary with the preferences of local communities. In other words, when constituents want a "large" public sector, they will tend to support higher tax rates than when constituents want a "small" public sector. The system of common shared taxes, however, eliminates the ability of citizens to choose regional tax rates through freedom of movement between local governments (Marlow, 1995, 595). However, the mix of public goods could still vary and that might induce people to migrate.

Sixth, tax sharing is likely to promote vertical equity. Residents in poor jurisdictions are unable to afford the same level of government goods as residents in affluent jurisdictions because incomes, property values, and other economic activities that determine the local tax bases are smaller. That is, a poor jurisdiction has a low fiscal capacity. Tax sharing may equalize fiscal capacities by increasing the revenues available to local governments in poor jurisdictions (Bruce, 1998, 165).

Seventh, according to Wayne Thirsk (1999, 72), when various taxes are shared by different rates, tax sharing creates an incentive for biased tax collection in favor of local communities. The reason is that jurisdictions try to influence collection of those taxes that go mostly to their budgets. This is a kind of a weird effect that cannot be found in basic textbooks and is usually believed to be peculiar to transition economies. Let me show some evidence in favor of this effect.

Theory and model

Here I use a theoretical approach to tax sharing that is based on the ideas of Wayne Thirsk (1999). One of the points of this approach is that, given that sharing rates are different for different taxes, tax sharing may influence efforts of tax collectors to collect certain types of taxes. In other words, local tax administrations focus on those taxes that go mostly to the budget of a local government. This is explained in the following way:

> Unless sharing rates are uniform for all shared taxes, the incentives to collect taxes may be altered by tax sharing arrangements. In principle non-uniform tax-sharing arrangements should not matter because State tax collectors are responsible for collecting all of the taxes assigned to different levels of government. In practice, it does appear to matter because the State's tax collectors are subject to dual subordination to the central government that employs them and to the oblast in which they live and work. Consequently, if the oblast's share of some taxes is higher than others, collectors may face some pressure to concentrate their efforts on collecting those taxes at the expense of collections in which the oblast share is low. (Thirsk, 1999, 72)

Let me discuss the relations between local authorities, tax collectors and taxpayers in more detail with respect to the institutional framework in Ukraine.

First, though tax administrations are formally accountable only to the central government, local tax administrations in fact have double subordination. They depend on the central government and are sensitive to the demand of local government. The reason for this is that an oblast administration controls various aspects of people's life within the territory of this oblast. In particular, local authorities control housing supply. This is true not only for Ukraine but also for other countries. For example, in Poland "…the recently enacted reforms set up a unitary system with the voivodships remaining part of the central government and the localities or communes becoming independent entities. The localities have been given

responsibility for municipal services including primary education, water and sanitation, roads, housing, fire prevention, sports, and culture. Their most notable source of power is ownership of local housing within their jurisdiction and commune-subordinated public enterprises" (Hewitt and Mihaljek, 1992, 342). Thus, good relations with local authorities may translate into better housing, more convenient location. Besides, no one punishes tax collectors for being sensitive to the demands of local administrations. Finally, tax collectors may be viewed as members of local community that have a stake in its welfare.

Second, Ukrainian enterprises tend to lack cash to pay all taxes that are required by law. In this situation managers of these companies have to make a choice: to pay a tax or to accumulate arrears on this tax and pay another tax. This situation is possible because long-term arrears on tax payments are allowed. Small cash holdings by an enterprise can be explained by spread of barter operations when goods are exchanged for goods without monetary transactions.

Third, a local administration has expenditure needs that have to be financed by local budgets. It usually feels pressure from an Oblast Rada and local community to spend on social protection, health care, education, construction and other programs that determine living standard in an oblast. Thus, more revenues of oblast's budget mean greater expenditures that in turn means political support of voters and positive appraisal by central government authorities.

All the above suggest that t**he system of tax sharing creates an incentive for local governments to have local tax administrations focus on taxes that significantly raise local budgets revenues**. Then, tax administrations put the pressure on managers of enterprises. Finally, companies pay taxes that are demanded by tax collectors and incur arrears on other taxes.

In order to find empirical evidence in favor of this simplified pattern of behavior of local administrations, tax collectors and managers of enterprises, I use simple econometric

techniques. First, I focus on relationship between share of tax received by local governments and efforts of local tax collectors. Then, I analyze the behavior of tax arrears.

My hypothesis is that efforts of local tax collectors are positively associated with the share of tax received by local governments. There appears to be two ways of testing it. First, I may consider how much efforts are put by tax collectors to collect a certain tax in a particular oblast and compare it with the share of this tax that was left to this oblast. Or, I may analyze this issue at the national basis. That is, I may look at how much efforts are put by all tax collectors in the country to collect a tax and compare it to the share of this tax that was given to all communities as opposed to central government. In the view of scarcity of data for each oblast, I follow the latter approach. I use execution rate (ER) of a tax – actual revenues generated by this tax in percent of a planned level – as a proxy for efforts of tax collectors. The time series for four taxes are pooled together to form a sample of 20 annual observations. Then a simple econometric model is specified:

$$ER_{it}=a+b*SR_{it}+e \qquad (1),$$

where SR is a share of a tax assigned to all local budgets in percent of total planned receipts (as set by the Parliament), i is the tax (VAT, EPT, EXC and PIT) and t is time (1995 – 1999).

My null hypothesis is that $b>0$. I test it against the alternative $b<0$.

Aforementioned theoretical derivations suggest that there is likely to be a **negative relationship between sharing rate and growth of arrears**. Econometric model is specified in the following way:

$$AR_{it}=c+d*SR_{it}+e \qquad (2),$$

where AR is a change in the stock of arrears, i is tax and t is time. Using pooled data for SR and annual change in the stock of arrears for each of the three taxes on the national basis, we would be able to estimate this model.

My null hypothesis is that $d<0$. I test it against the alternative $d>0$.

Note that the above-specified model (1) neglects the importance of cost of collection in determining the efforts of tax collectors. Strictly speaking, the efforts in collecting various taxes would depend on sharing rate as well as cost of collection: $E_i=E_i(s_i, cc_i)$ where s is tax share, cc is collection cost and i is a tax. The negative relationship between E and cc is usually considered to be conducive for satisfying one of the principles of good tax system – minimization of administrative costs. If some tax is difficult to administer then the government should focus on other taxes that are relatively easy to collect. However, biased tax collection due to differences in sharing rate is not consistent with the principles of efficient tax system.

Data and empirical results

Here I use data on tax revenues of the Consolidated and local budgets. This includes planned and actual revenue figures for each of the four "regulated" taxes - value-added tax, enterprise profit tax, personal income tax and excise tax - over the period of 1995-1999. The data for 1996-1997 are drawn from Statistical Bulletin of the Ministry of Finance of Ukraine (1999). Other data are taken directly from the annual Report of the State Treasury of Ukraine (1995, 1998, and 1999).

Planned revenue are proposed by the Ministry of Finance of Ukraine and adopted by Verkhovna Rada. Ministry of Finance's propositions are based on last year's results, tax base, tax rates and projections of major macroeconomic indicators – GDP, total profits of all enterprises, total income of households, volume of sales, etc. Actual revenues are the receipts that are in fact obtained by the State Treasury of Ukraine from taxpayers.

An execution ratio (ER) for each of the four taxes was calculated as a ratio of annual actual to annual planned revenue of Consolidated budget. This ratio at least in part reflects the efforts of tax collectors. However, an execution rate of a tax may also depend on the extent

to which revenue plans are realistic. The data show that revenue plans tend to be overly optimistic (see table 4). Since all planned revenue have been forecasted by the same agency – the Ministry of Finance of Ukraine – in relatively short period of time (1995-1999), it is reasonable to assume that all planned revenues have been projected with the same degree of feasibility.

Table 4. Execution ratio for selected taxes, percent.

Source: Ministry of Finance of Ukraine.

	PIT	VAT	EPT	Excise tax
1995	111.1%	95.0%	129.1%	87.8%
1996	107.3%	94.6%	91.0%	89.6%
1997	95.3%	97.5%	151.8%	112.9%
1998	101.2%	85.2%	244.6%	96.9%
1999	112.5%	100.7%	135.6%	62.4%

A sharing rate (SR) for a tax is calculated for each of the four taxes as a ratio of planned annual revenue that was assigned to local budgets to total annual planned revenue of the Consolidated budget. That is, it shows how the aggregated sharing was planned at the beginning of a year. Planned sharing is a signal to local governments that shows the part of a tax receipts they are allowed to keep for local expenditure programs.

The results of the regression (1) are presented in table 5. It can be seen that the null hypothesis cannot be rejected. Thus, it is concluded that efforts of tax collectors are positively associated with the sharing rate. At the same time, my results should be taken as indicative. It should be noted that the power of my results is rather low due to small sample size (20 observations). If I had the data on ER and SR for each oblast, I would have over 100 observations for each tax and would have a chance to obtain more powerful results. Meanwhile, data that I have show some support to my hypothesis.

Table 5. Regression results, model 1

Pooled LS / / Dependent Variable is ?ER
Sample: 1995 1999
Included observations: 5

Total panel observations 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	82.46565	12.67860	6.504317	0.0000
?SR	0.553142	0.208299	2.655522	0.0161

R-squared	0.281489	Mean dependent var	110.1125
Adjusted R-squared	0.241571	S.D. dependent var	37.15716
S.E. of regression	32.35935	Sum squared resid	18848.30
Log likelihood	-79.68569	F-statistic	7.051799
Durbin-Watson stat	1.704623	Prob(F-statistic)	0.016100

A word of caution should be said here. My results may be due to the willingness of local governments to accept taxes in kind (carry out so-called tax offsets). It is usually argued that tax offsets cause artificial increase in execution ratio. It is possible that over-execution of those taxes that go primarily to local governments is caused by widespread usage of in-kind payments of taxes at local level.

The results of the estimation of the second model show that the slope coefficient has expected sign (see table 6). However, the results are not statically significant. It can be seen that the null hypothesis can be rejected in favor of the alternative at a reasonable level. This result may be explained by incorrect specification of the model (2). It is likely to be the case that the change in the stock of arrears is influenced by other factors: spread of barter operations and tax off-sets, government policy toward indebted firms.

Table 6. Regression results, model 2

Pooled LS / / Dependent Variable is ?AR
Sample: 1995 1999
Included observations: 5
Total panel observations 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	640.8272	303.3238	2.112683	0.0489
?SR	-4.745799	4.983352	-0.952331	0.3535

R-squared	0.047968	Mean dependent var	403.6250
Adjusted R-squared	-0.004922	S.D. dependent var	772.2692
S.E. of regression	774.1676	Sum squared resid	10788037

Log likelihood	-128.2434	F-statistic	0.906934
Durbin-Watson stat	2.177061	Prob(F-statistic)	0.353544

Our results suggest that over-execution of those taxes that go mostly to local governments enlarges output of public goods at local level. On the other hand, under-execution of central government revenues leads to under-funding of central government's programs.

Chapter 5

POLICY RECOMMENDATIONS

The phenomenon of biased tax collection due to differences in sharing rate is likely to be considered undesirable from the point of view of economic theory since it does not guarantee the optimal level of local spending. Thus, there may be a need for policies aimed to reduce such biased tax collection. Many options and issues are open for policy analysis based on economic theory and institutional arrangements.

First, it reasonable to analyze whether the **incentives faced by tax collectors** can be changed to rectify the situation. The answer to this question appears to be ambiguous. For example, it is possible to introduce a system when benefits of tax collectors would depend on how even (uniformly) regulated taxes are collected. However, one might argue that it is sometimes difficult to distinguish low collection due to actions of tax collectors from an unfavorable shock to local economy. Another option is to protect tax collectors from the influence of local governments. It can be done through enforcing their independence from local jurisdictions. But, if tax collectors perceive themselves as loyal members of a local community, formal independence would make little sense. Also, the degree of dependency of tax collectors on the local authorities may be greater than we suspect.

Second, there may be a suggestion that all taxes should be shared at a **common rate within a region** but have different rates across regions. Indeed, this appears to be very effective in eliminating basic incentive for biased tax collection due to differences in sharing rates. Indeed, when all taxes are shared at a common rate within a region, a local government would be more or less interested in collection of all taxes.

However, one should not expect equal efforts to be put into collection of each shared tax even after equalizing sharing rates. Recall that efforts of tax collectors are likely to depend

on sharing rate as well as on the cost of collection. Establishing equal sharing rates eliminates bias in collection associated with different shares while allowing to the government to differentiate its efforts in collecting various taxes solely on the basis of collection cost. In particular, the authorities would expend tax collecting efforts per tax by comparing Marginal Cost of Collection with Marginal Revenue Collected. Thus, tax collecting efforts would generally be different. Indeed, tax-collecting effort would be expended according to Marginal Cost of Collection = Extra revenue collected of the amount owing, for each tax, which leads to the efficient outcome.

Third, it is interesting to discuss whether **intergovernmental grants** would be more efficient than tax sharing or would be a useful complement to it. First of all, let me discuss briefly intergovernmental grants and their effects and then compare them to tax sharing in the context of Ukraine.

Intergovernmental grants are revenue transfers from one government to another in a federal system. Grants flow from grantor governments, who collect the revenues, to recipient governments. There are two general types of grants – conditional and unconditional. Conditional grants are disbursed when the grantor government indicates how recipient governments are to spend the revenues. Unconditional grants do not specify how revenues are to be used by recipient (Marlow, 1995, 596).

Conditional grants specify, in some detail, which public programs the grants are to be spent on. **Non-matching** conditional grants transfer fixed (lump) sums of revenue to recipient governments. For **matching** conditional grants, grantor governments specify some rate, usually from 5 to 50 percent, at which they match funding by recipient governments. A match rate of 35 percent, for example, means that for every dollar of spending, the grantor government provides 35 cents to the recipient government. The additional 65 cents is the responsibility of the recipient government (Marlow, 1995, 598).

Unconditional grants are very similar (almost synonymous) to tax sharing and the first six effects of tax sharing (described in chapter 4) may be attributed also to unconditional grants.

At the same time, common sense suggests that there should be no incentive for biased tax collection when a community receives its revenues from unconditional grants regardless of the amount of taxes collected on its territory. Thus, unconditional grants may turn out to be more efficient than tax sharing.

Though a conditional grants system is also likely to eliminate an incentive for biased tax collection, it would bring some additional effects that do not accompany unconditional grants. A switch from tax sharing to conditional grants would change the nature of the relations between central government and regions. Indeed, depending on the details of the conditions, conditional grants would give the central government a considerable power in determining the composition of local expenditure programs.

An unconditional grant often yields a greater increase in utility in the recipient jurisdiction than will a conditional grant. This follows because unconditional grants simply increase community income without altering subnational government spending priorities, which themselves are dictated by local preferences. The main justification, for conditional grants over unconditional grants, therefore, must be that local decision making fails to produce the socially optimal outcome, as in the case of inter-jurisdictional spillovers. However, if a country has relatively weak expenditure management capabilities at the subnational level, then the proliferation of conditionality and performance criteria for special purpose grants is likely to generate confusion and pro forma fulfillment of the needed criteria. Thus, unless a country possesses the ability to monitor and manage the conditionality for grants, central governments would do better to simplify the design and conditionality of special purpose grants, and to supplement these by lump-sum transfers (Ahmad and Craig, 1997, 87).

Within the category of conditional grants, the choice of whether or not to impose matching requirements has also to take into account various considerations.

Rosen (1992) notes that a matching grant is a sensible way to correct for the presence of possible externality. When a community generates an inter-jurisdictional positive externality,

an appropriate subsidy can enhance efficiency. However, the central government has to be able to measure the actual size of the externality.

Matching requirements may induce a redirection of resources of subnational governments to the areas of spending considered of priority by the central government, but obviously at a cost for the local provision of other services. Also, matching requirements may place poorer, resource-constrained, regions at a disadvantage vis-à-vis the richer ones in the utilization of federal grants (Ter-Minassian, 1997b, 13).

A matching grant produces smaller utility than an equivalent non-matching grant. Consider Figure 2, which contrasts the cases of matching and non-matching conditional grants. The vertical axis measures the units of private sector goods. Units of public sector goods are on the horizontal axis. Before any grants are received, the community is constrained by budget constraint AB and, given its preferences, chooses E_1 where P_1 of public sector goods are consumed. A matching grant flattens the budget constraint to AC since the grant subsidizes consumption of public sector goods. The new equilibrium is E_2, and therefore the matching grant increases consumption of public sector goods to P_2. If an equivalent non-matching grant had been offered, the budget constraint would shift, in a parallel manner, out to DF, since this intersects the equilibrium attained with the matching. This grant is *equivalent* in the sense that it allows the community to consume the combination of goods that are chosen under the matching grant. The new equilibrium is E_3, and the equivalent non-matching grant results in consumption of public sector goods of P_3. This comparison demonstrates that the community reaches higher utility, as indicated by a higher indifference curve, when a non-matching grant, of equivalent value, replaces a matching grant. Notice that the matching causes the community to consume more public sector goods than it would consume under an equivalent non-matching grant. An excess burden therefore occurs, since a policy that generates higher utility (non-matching grant) could replace a less efficient policy (matching grant) of equivalent value (Marlow, 1995, 599).

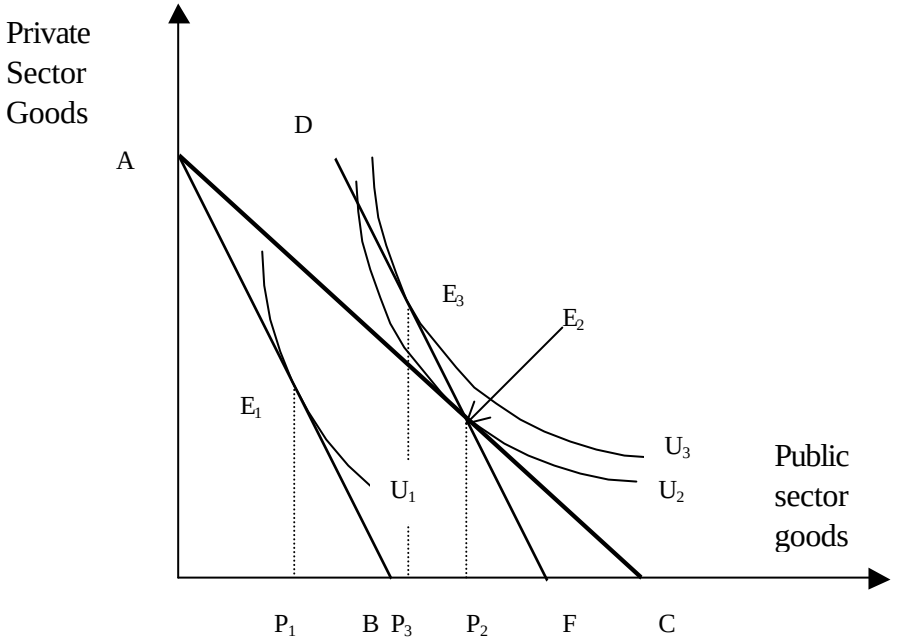

Figure 2. Matching versus non-matching conditional grant

Source: Marlow, 1995, p. 599

Fourth, without tax sharing or a grants system, would inefficient migration to richer regions result? Perhaps it is likely to happen, especially in the view of the fact that the regulation of the migration has been substantially liberalized over recent years. For example, when hiring people from other regions private firms as well as government organizations do not require official registration in local administrations. However, there is little evidence on the mobility of people between regions in Ukraine.

Theoretically, there are may be many factors that prevent citizens' mobility: possibility to travel with little cost, preferences for climate, proximity to relatives, availability of housing, etc. For example, one could argue that a citizen can change her place of residence to one in a neighboring political jurisdictions while maintaining her employment in her old political jurisdiction. However, slow proliferation of private automobiles and poor quality of roads makes such moves relatively difficult in Ukraine.

Fifth, would reducing the expenditure responsibilities of regional governments (with a corresponding reduction in their share of tax revenue) substantially reduce the problem of biased tax collection? Generally speaking, the results would depend on the degree to which communities rely on shared taxes as a mean of financing. Just reducing the relative weight of shared taxes in local revenues would still preserve the incentives and possibility for biased tax collection. Moving further toward matching expenditure responsibilities with the amount of own revenues that can be generated by local taxes would, of course, eliminate the problem of biased tax collection. However, such policy would not be consistent with the principles of fiscal decentralization and would level the benefits of decentralized decision making in provision of many public goods.

In summary, it seems reasonable to suggest the following policy recommendations on how to eliminate biased tax collection caused by the tax sharing system. First, it appears to be possible to eliminate basic incentives for biased tax collection by equalizing rates at which taxes are shared within a given region. Second, a similar result would be achieved by switch from tax sharing to the system of intergovernmental grants. It is possible to combine the above two policy measures. For example, it would be acceptable to have a common share for each tax in a region and some form grant from the national government that is tied to spending that has strong cross-border externalities.

Chapter 6

CONCLUSIONS

In this paper I analyze one of the consequences of decentralization in transition economies under tax sharing – biased tax collection due to differences in tax share. I explain possible causes of this phenomenon, show empirical evidence, and propose a number of policy measures on how to rectify the situation.

An improvement over current situation might be common share in conjunction with intergovernmental grants. Setting of a common share across all shared taxes in a particular jurisdiction would eliminate the basic incentives for biased tax collection, while grants would serve as an additional mechanism for attaining equity and correcting for spillovers across communities.

The relationship between fiscal decentralization and economic development has not been established yet (Guess et al). In this context the evidence presented in this paper would help to clarify this relationship for transitional countries. Also, the results of the paper may be of interest for policymakers who are concerned with the efficiency of taxation system in Ukraine and other transition economies.

The list of effects of decentralization in the presence of tax sharing that are mentioned in the text is by no means encompassing. There may be other, even more important and obvious, effects that should be taken into account when analyzing decentralization processes in transition economies. This area remains open for further research.

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APPENDIX.

Table A7. Revenues of Local Budgets, 1996-1998, million Hr

Source: Ministry of Finance of Ukraine

	1996						
Oblast	Total revenues	Own revenues	EPT	VAT	EXC	PIT	Other
AR Crimea	607.2	11.4	87.5	226.1	20.5	99.6	162.1
Vinnitska	392.8	7.5	83.1	149.7	2.1	32.6	117.8
Volinska	203.0	5.2	33.1	62.5	0.9	14.7	86.6
Dnipropetrovska	908.2	25.4	314.7	202.8	6.1	127.2	232.1
Donetska	1183.2	28.0	481.4	194.2	5.6	182.1	291.8
Zhitomirska	392.5	7.6	70.3	134.7	1.9	23.2	154.7
Zakarpatska	241.3	5.2	31.2	85.3	1.3	17.6	100.8
Zaporizska	448.4	14.3	227.5	61.7	1.8	71.0	72.2
Ivano-Frankivska	315.9	5.2	130.2	109.6	2.9	23.7	44.4
Kyivska	468.0	7.9	148.6	202.5	3.1	38.0	67.9
Kirovogradska	296.1	4.8	45.5	113.8	0.8	21.6	109.5
Luganska	606.5	17.2	130.7	234.9	1.8	65.3	156.5
Lvivska	551.2	16.3	186.8	190.1	5.5	55.9	96.7
Mikolaivska	303.0	4.9	105.7	98.5	1.3	34.6	57.9
Odeska	518.8	14.0	209.0	135.5	5.7	63.7	90.9
Poltavska	411.0	9.2	213.4	64.0	4.5	51.8	68.2
Rivnenska	226.5	5.5	64.8	96.6	0.5	18.3	40.9
Sumska	331.3	6.0	125.9	103.7	2.0	33.2	60.5
Ternopilska	232.6	3.9	34.9	81.7	1.8	14.9	95.3
Kharkivska	851.5	24.8	367.2	204.6	7.6	77.3	169.9
Khersonska	309.9	5.1	39.3	112.3	0.9	28.3	124.0
Khmelnitska	347.2	9.6	106.1	109.2	0.7	24.5	97.1
Cherkaska	341.5	7.2	106.6	135.2	5.9	31.9	54.7
Chernivetska	179.2	5.3	25.7	64.6	0.9	14.4	68.2
Chernigivska	301.3	6.8	87.9	127.8	6.0	26.1	46.7
Kyiv	1029.2	27.7	564.4	129.4	8.7	132.5	166.6
Sevastopol	141.6	1.8	26.0	49.9	3.3	26.2	34.4
Total	12138.9	287.7	4047.4	3480.9	104.1	1350.4	2868.4
% of total revenues	100.0%	2.4%	33.3%	28.7%	0.9%	11.1%	23.6%

Table A7 continued

	1997						
	Total revenues	Own revenues	EPT	VAT	EXC	PIT	Other
AR Crimea	554.5	14.4	134.0	0.0	21.0	121.1	264.1
Vinnitska	420.7	10.1	87.5	0.0	16.9	79.1	227.1
Volinska	244.4	7.6	36.3	0.0	5.2	39.9	155.3
Dnipropetrovska	1437.8	34.7	561.1	0.0	11.6	332.1	498.2
Donetska	1480.3	32.7	684.9	0.0	33.0	436.3	293.4
Zhitomirska	418.6	8.5	76.0	0.0	9.8	57.7	266.5
Zakarpatska	277.7	5.4	32.8	0.0	3.5	45.6	190.3
Zaporizska	574.9	18.2	276.8	0.0	10.7	170.4	98.8
Ivano-Frankinvsk	323.5	6.6	124.4	0.0	13.1	59.5	119.8
Kyivska	448.6	9.2	14.2	0.0	22.0	90.5	312.6
Kirovogradska	279.3	6.4	38.8	0.0	23.9	48.5	161.7
Luganska	639.6	19.1	233.4	0.0	11.5	176.1	199.4
Lvivska	588.0	18.3	254.3	0.0	24.1	138.8	152.5
Mikolaivska	374.5	6.8	153.6	0.0	8.0	73.1	132.9
Odeska	608.2	18.0	245.0	0.0	22.0	164.4	158.8
Poltavska	593.3	12.3	375.2	0.0	19.7	113.0	73.1
Rivnenska	264.1	6.1	93.0	0.0	1.1	47.0	116.8
Sumska	334.5	7.2	171.7	0.0	7.2	74.0	74.4
Ternopilska	257.2	4.7	45.0	0.0	14.7	37.1	155.6
Kharkivska	1019.8	29.2	558.1	0.0	56.1	199.5	176.8
Khersonska	313.4	6.3	66.8	0.0	4.4	63.8	172.1
Khmelnitska	352.6	14.0	95.2	0.0	3.8	59.1	180.6
Cherkaska	411.3	7.8	160.2	0.0	35.5	71.9	135.9
Chernivetska	204.5	7.0	38.7	0.0	9.6	35.2	114.0
Chernigivska	324.3	8.0	103.4	0.0	25.2	60.2	127.5
Kyiv	1738.2	35.8	968.3	0.0	51.4	468.8	213.8
Sevastopol	131.6	2.7	34.9	0.0	3.6	33.1	57.2
Total	14615.0	357.1	5664.0	0.0	468.9	3295.7	4829.3
% of total revenues	100.0%	2.4%	38.8%	0.0%	3.2%	22.6%	33.0%

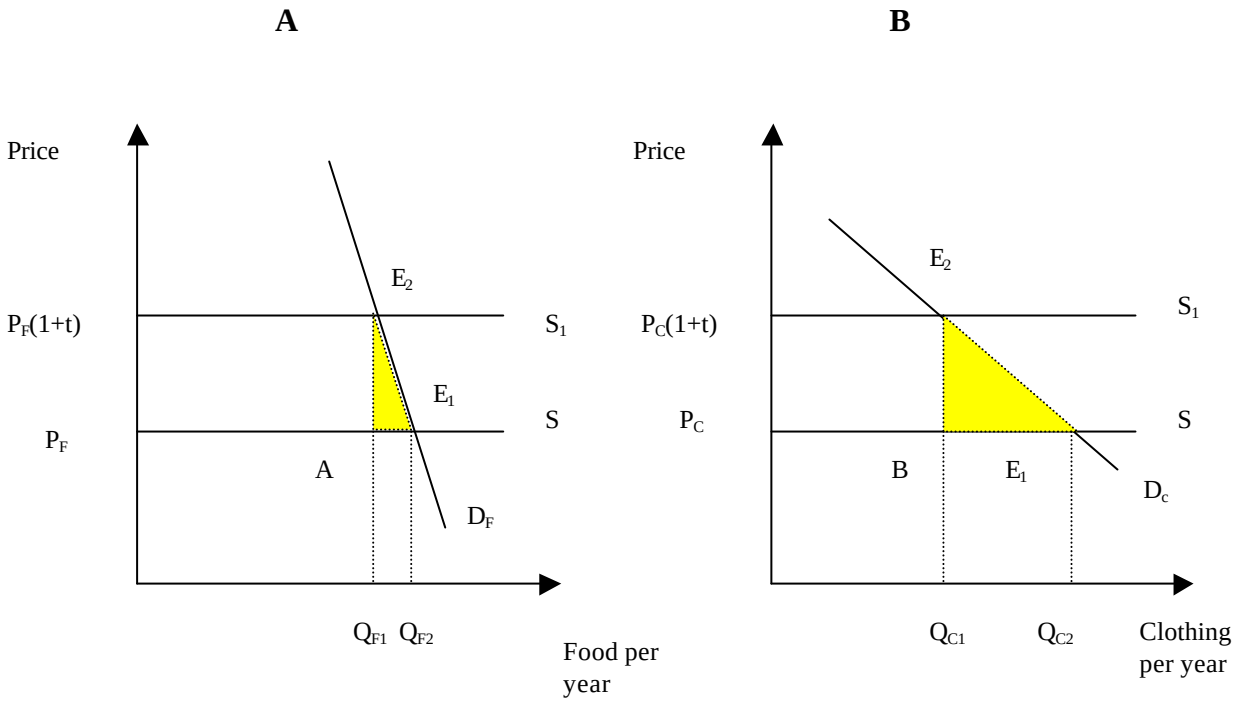
Table A7 continued

	1998						
	Total revenues	Own revenues	EPT	VAT	EXC	PIT	Other
AR Crimea	514.7	16.0	135.4	0.0	0.9	127.1	235.3
Vinnitska	409.0	11.1	65.6	0.0	5.7	80.8	245.8
Volinska	259.0	9.7	35.0	0.0	2.8	41.4	170.1
Dnipropetrovska	1124.0	29.1	341.3	0.0	0.0	359.0	394.7
Donetska	1582.6	37.0	623.4	0.0	0.0	459.4	462.8
Zhitomirska	431.9	8.5	73.7	0.0	0.0	61.5	288.1
Zakarpatska	298.4	5.2	49.9	0.0	0.0	48.1	195.2
Zaporizska	659.5	21.3	253.1	0.0	0.7	188.5	195.9
Ivano-Frankivska	371.3	7.6	143.6	0.0	14.3	66.0	139.7
Kyivska	614.8	10.2	156.3	0.0	2.5	100.5	345.5
Kirovogradska	272.0	6.0	36.3	0.0	0.0	50.1	179.6
Luganska	619.6	19.6	184.8	0.0	0.0	169.3	245.9
Lvivska	634.0	19.5	279.4	0.0	0.0	144.6	190.5
Mikolaivska	422.9	7.1	214.9	0.0	2.0	82.2	116.6
Odeska	651.3	21.5	212.1	0.0	0.0	179.9	237.8
Poltavska	797.7	13.7	531.5	0.0	0.0	118.7	133.6
Rivnenska	315.7	7.0	106.6	0.0	0.0	52.4	149.8
Sumska	351.9	7.7	149.8	0.0	0.0	73.0	121.4
Ternopilska	247.6	4.6	32.4	0.0	3.9	38.2	168.4
Kharkivska	1148.6	33.8	678.2	0.0	0.0	206.6	230.0
Khersonska	297.5	6.7	52.9	0.0	0.0	63.7	174.2
Khmelnitska	385.5	15.8	84.8	0.0	2.5	70.1	212.3
Cherkaska	454.9	8.7	138.6	0.0	13.4	76.1	218.2
Chernivetska	208.8	9.4	45.3	0.0	0.0	39.4	114.7
Chernigivska	295.0	9.0	79.2	0.0	4.2	62.3	140.3
Kyiv	1915.9	42.2	966.8	0.0	7.5	579.7	319.7
Sevastopol	129.6	4.0	23.6	0.0	0.0	32.1	70.0
Total	15413.6	392.1	5694.5	0.0	60.4	3570.6	5696.1
% of total revenues	100.0%	2.5%	36.9%	0.0%	0.4%	23.2%	37.0%

Table A8. Nominal revenues for selected taxes, thousand Hr.

Source: Ministry of Finance of Ukraine

	VAT	EPT	PIT	Excise tax
		Total Planned receipts		
1995	4754078.7	3742904.0	1441284.0	456629.47
1996	6602635.0	6042510.0	2415811.0	720977.0
1997	8455982.0	3815788.0	3459640.0	1069643.0
1998	8756400.0	2327900.0	3528100.0	1329963.0
1999	8302728.0	4700000.0	3940000.0	2822536.0
		Actual total receipts		
1995	4517326.8	4833951.1	1600713.2	401006.46
1996	6246238.0	5496573.0	2593141.0	646196.0
1997	8242294.0	5792122.0	3295685.0	1207912.0
1998	7460059.3	5694461.5	3570567.2	1288844.9
1999	8364963.0	6372727.0	4433864.0	1761130.0
		Planned receipts to Local budgets		
1995	2873651.9	2423044.0	707837.0	119609.42
1996	3564009.0	4321291.0	1267939.0	148638.0
1997	0	3815788.0	3459640.0	396659.5
1998	0	2327900.0	3528100.0	0
1999	0	3382730.0	2771150.0	598013.1



A flat-rate sales tax of t percent levied on both food and clothing results in greater excess burden in the clothing market as shown in B than in the food market as shown in A. Total excess burden can be reduced by increasing the tax rate on food and lowering the tax rate on clothing until the marginal increase in the excess burden in the food market equals the marginal decrease in excess burden in the clothing markets.

Figure A3. Excess burden and elasticity of demand.

Source: Hyman, 1996, 386.