Rural Serbia in the Light of the Census of 1863

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Introduction

Mid-nineteenth-century Serbia can serve as an historical paradigm of the Free Peasant State. In 1863, 93% of the population dwelt in communities of less than 2,000 inhabitants. Nearly all rural dwellers were members of settled, farm-owning peasant families. Landlessness was indeed optional. If they, or recent immigrants, lacked land to sustain their families, then, under the forestry law of 1861, they could seek homestead rights from the reserves of the *opština* (commune) of their residence. [1] The carefully tabulated rolls of land recipients which consequently appeared in the annual reports of the subprefectures show the law was no dead letter. [2]

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[1] The administrative units were *okrug, srez*, and *opština*, corresponding to the French département, arrondisement, and commune, and administered within a prefectural system. In this text these units will be referred to consistently as region, district, and commune.

[2] The provisions of this law are discussed in Nikola Vučo, *Položaj seljaštva*. Knj. I. *Eksproprijacija od zemlje u XIX veku*. (Belgrade, 1955) p. 12. Vučo intended to demonstrate that the experience of Serbia conformed to the Marxist law of agrarian concentration and proletarianization, and he argued that the communal land reserves were too small to provide sufficient land significantly to hinder these processes. A thorough analysis of these reports, to the best of my knowledge, has yet to be undertaken.

The pressure of settlement was low, despite immigration and a high birthrate. About a million inhabitants spread themselves over 37,511 sq. km. of land, which was for the most part reasonably fertile. Their fields occupied but 14.9% of the country's land surface in 1867[3] and were set in a milieu of unimproved pasture and woodland.

Taxation, though regressive in incidence, was low, and as there were virtually no large estates or feudal remnants, the head of the peasant family was very much his own master.

Subsistence economy was the rule. Crops, principally maize, were cultivated overwhelmingly for subsistence purposes. Farm animals, especially pigs, were raised to earn cash as well as to provide subsistence. The cash was used to pay the head tax levied on all adult males, and to buy salt and a few petty purchases. Peasant households not only fed themselves from their own produce, they also manufactured most of their textiles and footwear, their implements and furnishings. If, by chance, the harvest failed, an efficient system of maize granaries, which every commune had to maintain, stood at their disposal in emergency.

Thanks to the abundance of its natural resources mid-XIXth-century Serbia was not particularly poor, but institutionally and developmentally, it was a *tabula raza,* — even by comparison with the Ottoman provinces to the west, south and east. There were no railways, few carriageable roads, few schools, little market activity, barely any manufacturing, even of the proto-industrial kind, and no financial institutions. Serbia's peasants lived out their short and insecure lives sunk in a slothful ignorance which blighted their existence. 98.4 % were illiterate in the rural communes[4] and "coarse in [their] appetites without being sober".[5] Though nominally Christian, ignorance and isolation made them superstitious to a degree.[6] Under these circumstances their expectations were

[3] *Državopis Srbije,* V (Belgrade, 1871) pp. 1-115.
[4] T[aso] S[tojanović], *Nas ekonomski položaj.* (Belgrade, 1881) p. 77.
[5] Paris, Archive des Affaires Etrangeres. [A A E.] Correspondance consulaire et commerciale. Belgrade, [CCB] tome 1. despatch of 14 May 1847, fo. 390.
[6] See V Čajkanović, *Mit i religija kod Srba.* (Belgrade, 1973).

minimal, and lacking incentive to do more than ensure their survival, they worked no more than they had to.

They had long tended to live in *zadrugas,* extended family groups. But whether on account of their quarrelsomenen and mutual jealousies (as contemporaries would have it) or through the penetration of capitalism (as the Marxists argue) the kin-linked *zadruga* was giving way to the nuclear famiy. It is the familial system, its demography and its economic life on which this study is centred.

With hindsight, we know that the economy of Serbia was beginning to stir under the influence of modernizing forces, mainly external ones, from the slumber of stagnation. Not for nothing do Lampe and Jackson present Serbia — and the Balkan States in general — as the first generation of "Developing Nations" [7] However the genesis of that development was far from easy for contemporaries to spot in the 1860s: they were more likely, and with good reason, to claim the existing economic system was in decay and decline.

Our understanding of how Serbia's peasant people lived and provided for their needs has had to depend heavily on qualitative materials, but we attempt in the present study to apply quantitative techniques to the problem, by harnessing the data contained in the surviving registers of a census of population, income and wealth, most of which was carried out in 1863. The beauty of this document, from the point of view of the social-science historian, is the wide range of questions which are potentially answerable from this data source. In this study we make no claim to have exhausted more than a tithe of them; but we also hope to signal something of the remaining huge research potential of the document.

Our study falls into three parts. In the first, we examine the census itself, its construction and shortcomings. In the second the census data is used for the light it can cast on demographic variables, specifically on the age and sex structure of the population, and

[7] John R Lampe and Marvin R Jackson, *Balkan Economic History 1500-1950.* (Bloomington, Indiana, 1982). This is the authoritative standard text to which the reader is referred for a detailed study of the Serbian economic system.

discusses their implications for the structure and level of marriage and fertility, and the structure of the family. In the third part, our focus shifts to the economy. Having estimated Serbia's national income in 1863, we draw attention to marked regional inequalities in the rural economy, evaluate their causes and explore some of the links between the demographic and economic variables. The section also examines the relationship between rural family size and structure and relates this to its economic capacities.

I. The census of 1863.

The census of 1863 was an ambitious project, designed closely to apportion the burden of direct taxation to the resources of the taxpayers, rather than to leave apportionment to the organizational devices of the communes.

The surviving registers are held in the Archive of Serbia. [8] Each register enumerates all inhabitants of a single district, arranged by commune, or else the population of a single town. Details of income and wealth were recorded for each household, alongside the normal census information.

The basic unit of the census was the household, which was given a sequential number in the first column. In the next three columns of the registers were listed personal details for each member of the household, including unpaid servants. (Wage-receiving servants were taxed separately.) The name and occupation of each head of household was given first, then the name of each subordinate family member and servant, and his or her relationship to the head of household. Any disabilities among those enumerated which were so severe as to incapacitate them as taxpayers were also noted, as was age and sex.

[8] These registers are shelfmarked as Ministarstvo finansija, Popisne knjige, 1862-64, according to rural district or town, and the extent of the collection is inventoried in a cyclostyle list entitled "Spisak knjiga ministarstva finansija Srbije (po odeljenjima) 1839-1919."

The fifth column contains an inventory of the household's real estate assets, that is to say, its houses and sites, followed by the quantities of arable, meadow, vineyard, orchard, close etc. that it held, as well as built assets, such as watermills, shops and taverns. Arable was measured in days (of 0.365 hectares), meadow in *kosa* or scythes (of 0.218 ha) and vineyards in *motikas* or hoes (of 0.058 ha).[9] The values of these items were listed separately (in gold Austrian ducats) on the original census blanks from which the registers were compiled. Of the registers that we have analysed, those for Podunavlje carried over the itemized valuations from the blanks. For other districts, only the total value of property reached the registers.

The next column gives a figure for the monthly earnings of the household (in Maria Theresa dollars). Census takers were specifically enjoined not to include in these earnings any income arising from the ownership of the real estate assets enumerated, since this would result in double taxation of the same income source.[10] The same column was supposed to give an indication of the source of the incomes in question, such as "personal and familial work, service", "mobile property", "business" etc. The census blank ought also to have disaggregated income sources just as they disaggregated capital, but in practice it was only occasionally that disaggregated figures were transferred into the registers. Even the designations of the sources of income were rarely maintained systematically, but the registers for Belica and Trnava districts do provide consistently good details on this point.

On the page of the register facing was entered the tax group in which each household fell in respect of its real estate assets, and the tax group in respect of its income from sources other than these.

The form in which the data on each individual household was set

[9] These conversions are given in Vladimir Jakšic, "Stanje zemljoradnje u Srbiji," *Glasnik srpskog učenog društva*, XLI (Beograd, 1875) p. 5.

[10] Procedural instructions for the conduct of the census were printed as "Pravila popisa ljudstva, imanja i prihoda za porez po imučnosti" in the official gazette, *Srpske Novine*, [hereafter, *S.N.*] XXIX (1862). (Referred to below as "Census rules") Reference to the point about avoiding double taxation is made in Art 19, in issue no. 45 of 17 April 1862.

up in the registers is illustrated in Fig. 1 by the entry for the large multi-generational Mihajlović family of Vinogradi village, Belica district of Jagodina region. This extended family, heavy in lands, properties and financial assets, employing several living-in servants, is of the type around which the notion of the powerful, influential *zadruga* was based.

The census document is incomplete, as several registers, including that for Belgrade, are missing, while the vicissitudes of storage and the attentions of genealogists have reduced some pages to illegibility. However I would estimate that records survive for around 70% of the 1.1 million people enumerated. Some of the data from the census were abstracted and published in the official statistical serial, including regionally subdivided totals of male and female populations, and of their real estate capital (though not their incomes). [11]

Some of the registers, mainly urban, have been transcribed and published, the most notable being the register for Smederevo, edited by Dr Leontije Pavlović, who was for many years director of the local museum. His edition is annotated with a wealth of information about the persons and families enumerated. [12] Other registers have been edited in collections of documents on individual towns, by Branko Perunicić. [13]

Less work has been done to analyse the contents of the registers. Joel Halpern's study on Arandjelovac and its environs was primarily concerned with analysing familial structures, and makes only passing reference to the data on property and income; [14] and work by Bojana

[11] *Državopis Srbije*, II (Belgrade, 1865) pp. 12-17. 22-92.
[12] Leonfije Pavlović, *Smederevo u XIX veku*. (Smederevo, 1969).
[13] Examples include Branko Peruničić, *Grad Valjevo i njegovo upravno eodručje 1815-1915*. (Valjevo, 1973); and his "Popis zitelja i njihove imovine u Šapcu 1862 godine," *Godišnjak istorijskog arhiva* [Sapca] IV (1967) 255-336 and V (1967) 233-350. Useful transcription for rural areas may be found in Milan Vuletić, *Vranovo selo kod Smederevo*. (Smederevo, 1970) and Branko Peruničić, *Popis stanovnistva i poljoprivrede u srezu Jaseničkom 1863 godine*. (Belgrade, 1978).
[14] Joel M Halpern, "Town and Countryside in Serbia in the Nineteenth Century, Social and Household Structure as Reflected in the Household Census of 1863," in Peter Lazlett, *Household and Family in Past Time*. (Cambridge, 1972).

40 Округъ [illegible]

Срезъ [illegible]

Страна

ПОПИСА

Текућій брой	ИМЕ И ПРЕЗИМЕ домаћина и домаћице, деце родитеља и други сродника и укућана, који ценцособъ дажанъ развъ плаћаю, а пошто попишиъ	Станѣ здравля лица, т. е. да ли е оно и заштю за радъ неспособно	Године старости Мушки	Године старости Женски	Непокретно имаћ састоеће се у земљама, кућама, здавнама и зградама, кое што лице има у атару свое обштине или ванъ тога атара у Србіи: проценѣно у дукатима цесарскимъ	Мѣсечни приходъ одъ занимања по заслуги и плати, одъ пенсіе и одъ покретности имаћ израженъ у толирима
	[illegible]		11	12	1859	600
	[illegible]		60	–	[illegible]	
	[illegible]		50		[illegible]	[illegible]
	[illegible]			55	[illegible]	[illegible]
	[illegible]			50	[illegible]	[illegible]
	[illegible]			30	[illegible]	[illegible]
	[illegible]			28	[illegible]	[illegible]
	[illegible]			26	[illegible]	
	[illegible]			25	[illegible]	
	[illegible]			20	[illegible]	
	[illegible]		42		[illegible]	
	[illegible]		30		[illegible]	
	[illegible]		26		[illegible]	
	[illegible]		25		[illegible]	
	[illegible]		18		[illegible]	
	[illegible]		16		[illegible]	
	[illegible]		16		[illegible]	
	[illegible]		10		[illegible]	
	[illegible]		10		[illegible]	
	[illegible]		6		[illegible]	
	[illegible]		4		[illegible]	
	[illegible]			10	[illegible]	
	[illegible]			5	[illegible]	
	[illegible]			8	[illegible]	
	[illegible]			1	[illegible]	
	[illegible]			16	[illegible]	
					5505	120
	[illegible]		75		–	
	[illegible]		30		–	–
	[illegible]		35		–	–
	[illegible]		20		–	
50.	[illegible]		30			[illegible] 3
51.	[illegible]		28		[illegible] 10	[illegible] 3
52.	[illegible]		46			[illegible] 2
53.						
	[illegible]		31	29	[illegible]	238

TRANSLATION TO FIGURE 1

No.	Name and surname and occupation	age M	age F	real estate evaluated in imperial ducats	monthly income, thalers
50.	Milic Mihajlović, agric.	62		2 houses with	income
	brother Stojadin	56		with eight	from
	daughter in law Tomanija		55	weak buildings	mobile
	ditto Milka		50	with site of	prop-
	ditto Savka		30	one day, 96	erty
	ditto Elica		28	days plough-	domest-
	ditto Stojanka		26	ing and mow-	ic eco-
	ditto Ikonija		25	ing land, 21	nomy and
	ditto Kata		20	closes of 19	inter-
	nephews, Stevan	32		days,8 plum	est on
	ditto Anta	30		orchards of 6	money
	ditto Petar	26		days, 4 vine-	
	ditto Pavle	25		yards of 21	
	ditto Djordje	18		motikas and	
	ditto Todor	16		4 watermills	
	ditto Toma	16		of solid mat-	
	ditto Kosta	12		erial of one	
	grandson Lazar	10		millstone each	
	ditto Gintar	6		with a close	
	ditto Jovan	4		of 8days, 2	
	granddaughter Vasilija		10	watermills	
	ditto Draginja		5	also of solid	
	ditto Savka		2	material with	
	ditto Živana		1	sites of 4.5	
	foster-daughter Nasta		16	days in the villages. One house and one weak building with site of half a day, 18 shops and one tavern from two shops all of weak material in the town of Jagodina.	
		[value]		5505	130
	Stojan Živadinović,servant	25		-	-
	Kuzman Aleksić, miller	30		-	-
	Cvetan Stanojević, servant	35		-	-
	Andjelko Aleksić, servant	21		-	-

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Katić, on the register for Sǎbac, analyses both demographic and economic data. [15]

It was necessary to extract most of the data used in this survey from the registers themselves. This has limited the amount of information which could be used, for these registers are written in an archaic Cyrillic cursive, and use a non-modern vocabulary. Consequently it was not possible to delegate the work of transcribing them into machine readable records. So the present study is limited to abstracting information for most of the country at commune level, and supplementing this aggregative data with a fuller analysis of the registers for four rural districts, Podunavlje, Belica, Zaječar (rural) and Trnava, (24,000 persons), and for towns which served as market centres for these districts. (See Figure 2)

Figure 2

Serbia, 1863

Location of sample districts and towns from the Serbian census of 1863

[15] Bojana Katić, "Društvena struktura stanovništva Šapca 1862 godine," *Istorijski časopis,* XXXIII (1986) pp. 203-21.

For two of these towns, Jagodina and Zaječar, data has been taken directly from the registers, while partial data for three other towns, Smederevo, Kraljevo and Gornji Milanovac, was taken from published sources [16].

The registers differ considerably from one another in the information they record (for example, the registers for the towns of Gornji Milanovac and Kraljevo contain no age information for subordinate family members) and, as we shall see, the ages recorded are at best approximate. But the financial details they contain seem to be reliable: unlike the niceties of age, these mattered both to the authorities and to the respondents, as they furnished the basis for tax assessment, and so had to be estimated with care.

Reliability was improved by the policy of using local people as far as possible for the enumeration of each commune, which in the rural areas was a unit of manageable size, seldom comprising more than 200 houses. On this scale, local knowledge became an effective input.

The sub-prefects had to get commissions organized in each commune, composed of one local resident for every 20 households. The commission members were elected locally "with all tax classes represented proportionately to the number of heads". [17] This exercise must have been imperfect since it would anticipate the collecting of the data needed to determine the tax class into which families would fall, but it was clearly intended to prevent group interests from biasing the enumeration, and consequently the incidence of taxation. [18] The commission members were paid a small retainer for their services, and provided with guidance from a Finance Ministry appointee, usually a local official.

[16] In our master files, which are available on request, names have not been transcribed, nor has tax-group information, the former as we were not using names in this analysis, the latter since the information is purely derivative. The published materials analysed are: Pavlovic, *Smederevo*, Branko Peruničić, *Jedno stoleće Kraljeva, 1815-1915*. (Belgrade, 1966); Peruničić, Čačak i *Gornji Milanovac*, Knj.I. 1815-1865 (Čačak, 1968).
[17] Census rules, Arts 9 and 10, and Art. 31 paras 3 and 4, *S.N.* 7 Apr 1862.
[18] Census rules, Art. 8, *S.N.*, 17 Apr 1862.

The commission presidents were instructed to convene public assemblies at which they had to explain to the taxpayers and commission members their duties concerning the census. This was presumably on the basis of a lengthy series of instructions which had been published in *Srbske novine,* the official gazette.

Householders had to present themselves before the commissions (subordinate family members were not permitted to appear on their behalf) and the commissioners had then to extract the relevant information from them. This was where local knowledge was so valuable to them; although the census was designed to apportion the tax burden more or less proportionately to capital and income within each commune, the sum due from each commune was a simple multiple of the number of its resident tax heads. So if a householder were allowed to understate his resources, a heavier burden would rest on everybody else within that small community—including the commission members.

On the other hand, the procedures were necessarily of a rough and ready variety, for in this largely illiterate and unmonetized society, few people had effective means of supplying precise information. Most of the commission members themselves were illiterate (or so I would infer from the fact that most of the signatories' names on the registers were entered by the clerks and prefixed with a cross.) The support of priests, teachers and other literates was sought by the census takers, but there is no evidence that it was given. [19]

Where disputes arose, commissioners and taxpayers were supposed to try to reach agreement: "If the household head declares a lesser income than appears to the president or other commission member, according to the indicators provided [by the census rules] then let the valuers endeavour to convince the person in question that the house has, or could have greater gains and more income, and further let the commission decide according to its procedure". [20] The procedure included a provision for

[19] Census rules, Art. 18, *S.N.*, 19 Apr 1862.
[20] Census rules, Art. 75, *S.N.*, 24 Apr 1862.

appeals[21] which was frequently used, as numerous appeals[22] records survive in the Finance Ministry documents.

Capital assets were assessed fairly accurately. The commissions were enjoined to value each piece of land separately, taking into account not only its size, but also its location and quality;[23] and at least in Podunavlje where the results of this exercise were transcribed verbatim into the registers, the exercise was performed carefully.

There were obviously motives for omissions, since these assets attracted taxation, but these were probably not serious. Householders had an incentive (or thought they had) to see that all their property was enumerated, even though this might raise their tax burden, because the lack of a land register prevented most of them from holding a clear documentary title to their assets. For example peasants in Jagodina region (as elsewhere) were active in enclosing intakes from communal land. Some of the communes objected to registering what they considered still to be common land in the names of private individuals, but the Finance Ministry ruled that "if neither side can show evidence of ownership, they should be enumerated as in private hands".[24]

Income was less tangible than real estate, though there were rules-of-thumb for assessing it. In a peasant subsistence society, there could be confusion as to whether subsistence income or only cash income should be included (though the census rules made it plain that both elements were taxable). Problems arose in avoiding double-counting income from labour and capital when, as was usually the case, these were vested in the same taxpayer.[25]

The Finance Ministry was aware that many families had a multiplicity of income sources, and it wanted them all to be included. While advising the commissions to pay attention to the number of able-bodied family members (including women) and to

[21] Census rules, Art. 118, *S.N.*, 28 Apr 1862.
[22] Census rules, Art. 62, *S.N.*, no. 47 of 1862.
[23] Arhiv Srbije. [A S.] MF A I 86 1864 no. 3145 of 20 Jun 1863.
[24] A S. MF A I 86 1864 no 1368.
[25] Census rules, Art. 79, *S.N.*, 24 Apr 1862.

known sales of livestock, it also counselled acting on the principle that "He who consumes more and lives better can be represented to have more income",[26] a principle which ultimately depended on the local knowledge of the commissioners.

The census does not relate to any precise point in time. The data were collected for the most part during the second half of 1863, at about 40 households a day per district,[27] which would usually comprise around 4,000 households, so the census dragged out over several months, with most completions achieved in October and November of that year. The returns stated monthly not annual income, and therefore may be assumed to have reflected experience in the 1863 calendar year, rather than during the preceding twelve months.

Although the financial information would obviously reflect the circumstances peculiar to 1863, the intention was for the census to serve as the basis for taxation for three years, after which it was to be renewed.[28] Although provision was made for adjustment between censuses where circumstances changed markedly,[29] it seems likely that census takers sought to eliminate any obviously short-term influences on income, in order to obtain a figure which would reflect the longer-term taxable capacity of those enumerated.

The population disclosed by the census was 1,108,668, of which 98,594 persons were urban residents.[30] This figure modestly understates the true resident population, and doubts have been expressed concerning its reliability.[31]

There was an element of systematic under-enumeration. Turkish citizens in the garrison forts lay outside Serbia's jurisdiction, while of the gipsies, only those of settled abode were covered.[32] The number

[26] A S. MF A I 86 1864, no. 3411, Načelnik Jagodinske — Ministarstvo Finansija.
[27] Census rules, Art. 23, *S.N.*, 17 Apr 1862.
[28] Census rules, Art. 24 *S.N.*, 17 Apr 1862.
[29] *Državopis Srbije*, II.
[30] Zavod za statistiku i evidenciju N R Srbije, *Stanovništvo NR Srbije*. (Belgrade, 1953) p. 5.
[31] Census rules, Art. 150, *S.N.*, 1 May 1862.
[32] Vladimir Stipetć, "Stanovništvo uže Srbije u 19 vijeku i priivi srpski ustanak," *Glas CCXCIV Srpske akademije nauka i umetnosti*, (Belgrade, 1975) p. 231; "Popis ljudstva Serbie u godini 1863," *Državopis Srbije*, II p. 14.

of Turks has been estimated at 2,000 and that of migrant gipsies at 12,000.[33] The inclusion of Turks and migrant gipsies raises population to 1,122,668, of which 91.04% was rural. It is on the basis of this figure that we have made our aggregative calculations.

Even so, this may still be an underestimate. Since the census was spread over an extended period, there was scope for inaccuracy and under-enumeration. Another weakness in the procedure was that each taxpayer was supposed to present himself to the commission, rather than be called on by an enumerator at his home. (In practice references to so many households a day suggest that house calls were being made).

The censuses made in 1866 and 1874 are held to have been more reliable[34], and backward extrapolation from these (taking the migrant gipsy population into account) would imply under-recording of 4.5% of the population in 1863. But as the years 1864-6 saw an abnormal burst of population growth, with unusually low mortality which compensated for exceptionally high mortality in the preceding period, as well as high immigration, the extent of under-recording may well be much less than this[35]. Except in estimating total national income, under-enumeration does not matter too much as we are mainly interested in disaggregating the data we have.

The problems of enumerating the ages of persons in a society which lacked vital certification become immediately apparent when an age distribution of respondents is attempted. The age distribution for women is particularly unsatisfactory, probably because most household heads were male, because most adult males were household heads, and because it was the household head who reported to the census commissions. Respondents might have a reasonable idea of their own ages, and those of their children who had been born during the last few years, but they had a far less accurate idea of the ages of their wives and kin.

[33] *Stanovništvo NR Srbije*, pp. 5-6.
[34] See figure 4, in Marvin R Jackson, "Comparing the Balkan Demographic Experience, 1860 to 1970", *Journal of European Economic History,* XIV (1983) p. 269.
[35] Kemal Karpat, "Ottoman Population Records and the Census of 1881/2 - 1893", *International Journal of Middle East Studies,* IX (1978) p. 337.

As a result, women's ages tended to be rounded to the nearest five or ten years. Another difficulty is that children were aged not from zero but from one year, though there is no evidence to suppose that people thought in terms of uncompleted rather than completed years. This does not render the age data unusable, and, as will be argued below, there is reason to suppose that few family members were omitted; but the demographic data clearly do not permit any calculation which depends on fine tuning.

Ultimately the usefulness of a pre-modern document such as this census has to be judged from the "feel" of it. My impression is that those who administered it, the enumerators and the clerks who transcribed the records into the registers, did their job conscientiously for the most part, though they clearly found it highly vexatious. What resulted, in my judgement, was a document which left a realistic record of the population and its means of support, and one which is therefore worth using for analytical purposes.

II. Sex, Age, Marriage, and the Family

a) Sex imbalances, causes and implications

Balkan populations in the nineteenth century showed a strong propensity to male surplus. This is certainly the case with those rare Ottoman statistics which counted women as well as men, as for example the census of 1882-9. According to the work of Kemal Karpat, this census indicated a population for Turkey in Europe (excluding Constantinople) of 3.95 million, but with a male surplus of 17.7%[36].

Such surpluses are commonly attributed to the under-enumeration of women[37]. However, this may only be regarded

[36] Stanford Shaw, "The Ottoman Census System and Population 1831-1914", *International Journal of Middle East Studies,* IX (1978) p. 249.

[37] Maria Todorova, "Population Structure, Marriage Patterns, Family and Household (According to Ottoman Documentary Material for North-Eastern Bulgaria in the 60s of

as a partial explanation. Maria Todorova, working with 1860s data on Ottoman Bulgaria, showed a male surplus for ethnic Bulgarians in three north Bulgarian towns, T'rnovo, Hacioglu Pazardzhik (now Tolbuhin) and Silistra, of 11%. She also referred to other population estimates analysed by Todorov for northern Bulgaria, Serbia and Greece which show male surpluses of 5-8%[38]. Todorova considered her results statistically admissable, and did not attribute them to under-recording. In fact all post-Ottoman censuses, in Serbia, Bulgaria and Bosnia consistently disclose male surpluses right up to the Balkan wars, as does the one true census taken in Montenegro in 1911, which shows a male surplus of 8.8%[39].

The Serbian census of 1863 is no exception in this respect. Within the four rural areas analysed in detail there were 13,132 males and 12,321 females, indicating a male surplus of 6.6%. This is displayed along with other salient demographic characteristics in Table 1 (below, p 18). In the towns, the male surplus was even more marked. The three towns analysed in terms of their population structure, Jagodina, Zaječar and Smederevo, had a combined male population of 6,199 and a female population of 5,124. The urban male surplus was thus 21.0%. Do these imbalances reflect the true situation?

Now we reason that if male surplus had resulted from the under-enumeration of women, it would be most readily observed among the youngest age groups. Small children are more likely to be lost to the census taker than adults, besides which the sex-ratio for young children will not be affected by sex differentials in migration.

But the census documents show the reverse of this pattern. Male surplus appears in the adult age groups, rather than among infants. Taking the rural areas first, no differential under-recording seems to have occurred among the 1,205 infants in the first year of life. True, there was a male surplus of 1.51% among these infants, but this is only

the 19th Century)" *Etudes balkaniques*, (Sofia) 1983 pp. 63-4.

[38] Pavle Radusinović, *Stanovništvo Crne gore do 1945 godine*. (Beograd, 1978) p. 133.

[39] Infanticide has been suggested to me as a possible explanation, but nothing in the literature of which I am aware gives the slightest hint of this.

to be expected from the normal tendency of male births to outnumber female births by around 4-5%. As male infants were at higher risk than female infants, then, in this society where infant mortality was in any case high, the number of surplus males would already have been partly honed down at the time of the census, since their average age was presumably about six months. In practice, however, the honing process took several years to complete, with the result that the 0-4 age group shows a 2.21% male deficit; in the later stages of childhood a sizeable surplus of females was emerging. We infer from the sex-structure of the youngest age-group that in respect of the villages, the census crudely but more or less faithfully reflects reality.

For the towns, however, it is likely that there really was some degree of female under-recording. As the towns were the target of immigration by young unattached males from the villages, we would expect them to show a larger male surplus than the villages, and so indeed they do. But they also show a male surplus of 10.55% among infants in the first year of life, and although this was honed down, as in the villages, to reduce the surplus at ages 0-4 to 5.64%, it really does seem likely that female infants were being under-recorded by around 7%[40]. (Whether women, in total, were being under-recorded by a similar amount is not determinable, but we would infer that there was probably some female under-recording at all ages.) For the individual towns researched, the numbers are sufficiently small for random variations to have an effect on sex-ratios, but it may be noted that Jagodina shows a male deficit of 3.2% for the 0-4 age group, which looks plausible, but Zaječar shows a 1.2% male surplus, which is unlikely.

Under-recording was concentrated particularly on Smederevo, where the male surplus in the first year of life was 20.3%, and in the first quinquennium, 21.5%. This indicates serious female under-recording.

In summary, there was probably female under-recording in some or most towns, particularly of infants, but its effect on figures for the

[40] See vital statistics tables in *Državopis Srbije*, XV and XVII.

country as a whole would be negligible, because of the huge rural preponderance.

Though the relatively high attrition in the stock of infant males led to the emergence of female surpluses at around age 5, this imbalance then reversed itself in the later stages of childhood and adolescence. In the villages, the female surplus of 2.2% at ages 0-4 falls away to 0.8% at 5-9, and at the age group 10-14 a large male surplus re-emerges, of 9.5%. Beyond this point the tendency of the enumerators to round female ages to multiples of 10 years starts seriously to distort the quinquennial figures, so the subsequent rise of the male surplus to 19.1% at 15-19 and its drop to 10.5% at 20-24 should not be read as signifying any more than that the incipient male surplus at age 8-9 increased further among adolescents before flattening out. The figures for mature adults in Table 1 indicate that a stable male surplus of around 11% persisted into middle age.

These findings are important, for they show that the prime (possibly only) cause of male surplus in the Serbian villages was the relatively high attrition rate among 5-15 year-old girls, and that no further disproportionate female attrition occurred in later life. Therefore we may discount maternal mortality — the obvious candidate for explaining female attrition — as a factor of significance in creating the imbalance in the sex structure. This could only have occurred among a significantly older age group than that which suffered the most significant relative attrition. Even then, it was a minor cause of death, which was largely counter-balanced by the higher risk to males of violent or accidental death [41].

In the three towns the male surplus among youths was far more pronounced than in the villages. Having fallen to a modest 3% at 5-9 years, the difference opens up to 24.4% at 10-14, and to 35% at 20. Katić shows a broadly similar pattern for Šabac, with a male surplus of 10% at 5-9 widening to 50% at 10-14, then fluctuating trendlessly [42].

[41] Katić, "Društvena structura," p. 209.
[42] J Hajnal, "European Marriage Patterns in Perspective," in *Population and History. Essays in Historical Demography*. ed D V Glass & D E C Eversley (London, 1965).

This does not mean that urban life was more lethal to adolescent girls than village life, for 10-14 was the age at which boys moved from the villages into the towns to begin apprenticeships. It is not clear from the figures whether adult females had a shorter life expectation in the towns than males, because there is evidence to suppose that men of all ages were continually moving into the towns.

Todorova's research on the urban population of Bulgaria gave results which conflict partly with our analysis. Todorova placed emphasis on the way the surplus of males rises from 4% at 0-4 to 12% at 15-49. Speculating on a socio-economic explanation, rather than ascribing the gap to maternal mortality, she pointed to the effects of the heavy burden of farming, home industry, and child-rearing on Bulgarian women. It is true that her sample does not show the same contraction in the proportion of females as we have observed for Serbia at ages 5-15, for the period at which the male surplus asserts itself is 15-19.

Even though the age of first marriage for females was a low 18.3 years, there is a possible alternative explanation for the trend she observed. The widening gap in this urban sample could easily be attributable to male inward immigration from the villages. However, her sample (2,360 persons) is too small to affirm or refute the suggestion that the Bulgarian urban demographic experience was similar to the Serbian even though the rounding errors in her source data are less severe than the Serbian ones. Still, there could well have been sufficient differences between the Bulgarian urban and Serbian rural demographic patterns to permit significant differences in the interpretation of the male surplus phenomenon.

So what caused the relatively high attrition in Serbia amongst older female children? This is a question for which a definitive answer will have to await the attention of medical historians, now that the problem has been identified. Cause of death is difficult to cull even from much later Serbian demographic statistics, and those for the 1860s do no more than record total births, deaths, and marriages by community.

One possibility is that girls were subjected to more neglectful

treatment than boys, or were fed on a customarily less nutritious diet. Were this to have been the case, we would expect girls from poorer families to have suffered more seriously (in differential terms) than girls from wealthier homes, in which the same degree of discrimination would have had fewer lethal consequences, because of the higher absolute level of maintenance.

However, a test we ran on male-female ratios of 6-16 year old children, in our four rural districts combined, distributed against the per capita real estate value of their family holdings disclosed only a weak correlation between family affluence and male surplus in this age group. Moreover, this correlation was *positive* whereas we needed a negative correlation to support the female undernourishment hypothesis. The test is not conclusive as there is inevitably a large amount of statistical noise to interfere with the findings. Still, the result hardly encourages this line of enquiry.

b) Marriage and widowhood.

Our inability to explain why females suffered relative attrition between the ages of 6 and 16 is regrettable, since the result seems to have been fundamental to the way in which Serbia's marriage patterns diverged from those of the west European demographic system as established by Hajnal[43]. The population of Serbia and by inference that of the Balkans as a whole — behaved in respect of marriage and fertility quite differently to Homo Europeanus, and we will argue that male numerical predominance among adults, and the divergent marriage pattern are mutually linked. Table I breaks down our 25,453 rural dwellers by age-group, sex and marital characteristics.

[43] According to Massimo Livi-Bacci, *A History of Italian Fertility during the Last Two Centuries*. (Princeton, 1977) p. 251.

Table 1
Age, Sex and Marital Statistics, Rural Serbia 1863

Agegroup	males				females				males %married	females %married	marital agegap	Male surplus
	mar.	wid.	single	all	mar.	wid.	single	all				
0- 4	0	0	1906	1906	0	0	1949	1949	0.00	0.00	-	-2.21
5- 9	0	0	1957	1957	0	0	1972	1972	0.00	0.00	-	-0.76
10-14	0	0	1688	1688	0	0	1542	1542	0.00	0.00	-	9.47
15-19	77	1	1434	1512	166	0	1103	1269	5.16	13.08	2.02	19.15
20-24	662	10	668	1340	953	21	239	1213	50.15	80.30	2.13	10.47
25-29	864	17	219	1100	933	34	21	988	80.09	97.87	2.43	11.34
30-34	799	37	93	929	858	63	6	927	89.99	99.35	3.30	0.22
35-39	534	28	38	600	423	54	1	478	93.67	99.79	3.76	25.52
40-44	588	46	28	662	546	148	4	698	95.77	99.43	4.10	-5.16
45-49	347	34	22	403	192	49	1	242	94.54	99.59	4.74	66.53
50-54	303	56	14	373	281	190	10	481	96.25	97.92	4.73	-22.45
55-59	105	26	7	138	66	27	1	94	94.93	98.94	3.84	46.81
60-69	200	68	11	279	107	151	4	262	96.06	98.47	5.46	6.49
70-99	98	17	4	119	53	21	1	75	96.64	98.67	6.52	58.67
Age ?	--	0	--	4	4	--	1	--	3	4		

Males 13132 Females 12321 Total: 25453 Male surplus: 6.58%, Families: 4968, Family size: 5.12

Servants - total: 22 equal to 0.09% of population
Soldiers - total: 9 equal to 0.04% of population
Convicts - total: 3 equal to 0.01% of population
Disabled - total: 30 equal to 0.12% of population

Women in the Serbian villages married almost universally, though not particularly early. 80.3% were (ever) married at 20-24 and 99.3% at 30-34. The male surplus inherited from adolescence is surely linked to the near universal marriage of women, who had no need to wait to find (or be pressed on) a spouse. But it was unusual for girls to be married at 15, the most likely age of physiological marriageability [44]. The customary age of marriage for women, 20-21, is higher than the 18.3 year median for Bulgarian women in Bulgarian towns [45], or that of eighteenth-century rural Hungary, where 52% of brides were under 20 [46]. Only 13.1% of girls were married before they were 20; even these were mostly 19-year olds. (However, the enumerators may well have rounded the age of a number of teenagers to 20, especially if they were married.)

There were good reasons for the lack of teenage marriage. Serbian villagers were fairly liberal concerning the marriage choices of their daughters, and did not try to press them early into arranged matches. In contrast to the pattern which prevailed in some Macedonian and Albanian districts, they did not seek to exploit the scarcity of their daughters by demanding a bride-price [47]. But, aware that the loss of their daughters to another household would leave them shorthanded, they discouraged early matches, but tacitly condoned the elopements which frequently resulted [48].

So, although most Serbian girls were married younger than their west European counterparts, the age of brides lay within the normal range of west European expectation. The big difference is that few deferred marriage to physiologically advanced ages, or failed to marry at all. In respect of the nuptuality of females, Homo Balcanicus deviates as much from Asiatic as from western European norms.

[44] Todorova, "Population Structure," p. 66.
[45] Hajnal, "European Marriage Patterns," p. 131.
[46] This practice continued in the extreme south of Serbia, where efforts were made to erdicate it. See M P Živanović, "Uspeh ankete o kupovini žene u opštini topličkoj," *Vardar*, III (1914) no. 189, p. 2.
[47] Sir Charles Eliot, *Turkey in Europe*. (London, 1900) pp. 339-41.
[48] Todorova, *Population Structure*, p. 64.

Comparison with the Hungarian pattern referred to above suggests that a behavioural shift towards later marriage had probably occurred since the eighteenth century.

Although male numbers were in surplus, few men would expect to remain celibate for life. (The Orthodox church has a married priesthood). Therefore, rural men waited longer for marriage than did rural women, and exactly half remained unmarried up to their 25th birthdays. But by age 34 or 35, 90% of men married, and eventually, at 50-54, 96.3% of those who had survived that long had also found a wife.

Consequently husbands tended to be older than their wives. Taking all spouses of either sex, of age 20-24, whose partners were the same or a lesser age than themselves, on average the men were 2.13 years older than their wives. This gap steadily widened with age, to 3.3 years when the older spouse was 30-34, and 4.1 years at 40-44. (See Table 1).

Observing a similar pattern in the Bulgarian towns, Todorova represents this as a kind of serial polygamy, in which (relatively) resilient and well-treated men married, swiftly overburdened, and consequently killed off a succession of wives, each time re-entering into competition for the pool of marriageable girls [49]. But we do not accept this description as valid for Serbia, where age for age, the life expectancy of adult men and women, though short, was roughly equal.

Since husbands were older than their wives, then, even among the youngest couples, wives were more likely to survive their husbands than vice versa. Among younger adults of both sexes there was no social taboo on remarriage; indeed there was considerable pressure to remarry. We do not know what proportion of wives were married to second or later husbands, but from the age structure of the children of their husbands, we can say that at least 13% of married women were second (or subsequent) wives.

[49] See Ainsley J Coale & Susan Watkins, *The Decline of Fertility in Europe*. (Princeton, 1986) pp. 153-4.

At all age groups, widows formed a higher proportion of the ever married than did widowers. Widows comprised 2.2% of ever-married women at 20-24, widowers 1.5% of ever-married men. The figures rise to 11.3% and 5% at 35-39. Considering that the average woman of 39 was married to a husband of 43, while the average man of 39 had a wife of 36, this is in no way remarkable. Given the high overall mortality among adults in their 30s, the 11.3% figure for 35-39 year old widows could indicate transient rather than permanent widowhood. But at 40-44, the rate of widowhood doubles abruptly to 21.3%, and rises further at 50-54 to 40.3%. But at this age, widowers were only 15.6% of ever married men, and among very old men (70-99) 14.8%, while married women in this highest age group were outnumbered 2.5 to 1 by widows. Evidently, widowers expected to remarry regardless of their age, but this expectation was only shared by pre-menopausal women.

The enumerators used the diminutive form, *udovica* "little widow" for women in their 20s and 30s, reserving the standard form *udova* (widow) for older women, which probably indicates a lot about the customary expectation of remarriage. Differential remarriage rates in the higher age groups created a constant backflow into the marriage market of older men, but as older women withdrew from that market, older widowers did not remarry their own age peers, but would take wives substantially younger than themselves, so the age gap between spouses would continue to widen. But, as they seldom married women young enough to be their daughters, their target group must have been the "little widows". So, as the second husbands of the "little widows" would normally have been older, relative to themselves, than their first husbands, the expectation of the "little widow" on remarriage must have been of fairly swift bereavement. The prevalence of remarriage thus reflects little more than the low life expectation of both men and women in what should have been their prime.

c) Fertility

As virtually all women married, and as pre-menopausal widows

were speedily remarried, so non-marriage placed little restraint upon their potential fertility, even though illegitimacy was negligible. The data in Tables 1 and 2 can be applied to calculate the index I_m, which measures the ratio of births produced by currently married women of 15-49 to the number of births which would have resulted had all women in this age group been currently married, or in effect, the extent to which fertility was constrained by female celibacy or widowhood. The ratio is weighted to take account of the greater potential fertility of younger women than of older ones, by use of the Hutterite fertility schedule. An I_m value of 1 reflects the case where all women are married throughout their fertile lives, and an I_m of 0 the case where none are married throughout this period[50].

The calculated I_m value for the rural areas tested was 0.745, for the towns 0.776. Given that 93% of the population was rural the implied national figure is 0.747. The voluminous national tables of fertility indices for European countries which were compiled by Coale and Watkins for the early 1860s do not include any comparable east European data, but as we might expect, our estimate of I_m for Serbia is high, 64% above the west European average. It is similar to the Bulgarian figure for 1900 of 0.737. Surprisingly, the Coale and Watkins figure for Serbia in 1900 is higher still at 0.866[51].

The high I_m for Serbia in 1863 indicates that overall fertility was likely to be high, unless fertility within marriage were heavily constrained. We can obtain a rough approximation to I_g, marital fertility, by taking the total number of children born legitimately to women in the four regions of which the test districts formed part (since vital statistics were only disaggregated to regional level.) Since the census was conducted in the summer of 1863, we take the mean of births in 1862 and 1863[52]. This total comes to 9018. The 1863 female population of the four regions was 104,998[53]. We now have to

[50] This could possibly result from difficulties in using the published 1900 census figures, which group cohorts in age-groups of 16-20, 21-25 etc. rather than the normal 15-19, 20-24 etc. cohorts.
[51] *Državopis Srbije*, VIII, pp. 44-5, 46-7.
[52] *Državopis Srbije*, II, p. 12.

assume that the distribution of females (by age and marital status) in the four regions was the same as that in Table 1. If these women had been Hutterites, they would have borne 14,906 legitimate children. The actual figure of 9018 is 60.5% of this, implying an I_g of 0.605.

This figure is low, compared with the west European average of the time of around 0.7, and (surprisingly) with Serbia in 1900 (0.645) and Bulgaria 1905 (0.694). However, it is not secure, depending as it does on the above assumptions, and on the untested assumption that there was no significant under-recording of births relative to under recording of female population.

Fertility indexes are not directly measurable from the census registers, because the children recorded are survivors during their first year of life, and the rate of infant mortality was unrecorded. (In 1907-10 infant mortality during the first years of life was 17.2%, but in 1863 it could have been significantly higher, as the general death-rate had fallen considerably during the intervening year[54].) Operating in the contrary direction (and inflating calculated fertility) a significant but indeterminate number of children in their second year of life entered as if in their first, because of the lack of a zero age group.

If the procedure adopted to estimate I_g yields a reasonable approximation to the truth, it discloses that married women of 20 and over in our rural test areas bore 1017 children, rather than the 1202 identified from the census registers. That is to say, the net effect of ignoring both the inclusion of children of more than one year of age, and the impact of infant mortality was to inflate the true total of births by 18%.

In Table 2 below, the number of children of "1" year born to identified mothers is displayed, and is expressed in per mil terms after adjusting for this 18% overstatement, prorated evenly according to the age group of the mothers. (Illegitimacy is ignored; the vital statistics indicate that 99.9% of births were legitimate.)

[53] See below p. 25.
[54] Coale and Watkins, *Decline of Fertility*, pp. 14-16.

Table 2
Fertility in rural Serbia as indicated by the 1863 census: children born annually per 1000 women.

Age of mother	Annual births	Corrected births per 000 women
20-24	383	242
25-29	324	275
30-34	282	208
35-39	100	166
40-44	194	97
45-49	18	33
Overall 20-49	6834	

Note: Annual births are children of "1" year in our test data, born of identified mother. For adjustment see text.

This exercise provides us with age-specific data, from which we can learn something about underlying marital fertility behaviour, bearing in mind its low estimated level. By calculating the number of births the married women in each age group would have produced had they been Hutterites, and dividing the actual (corrected) number by the latter number, we can produce age group specific I_g's, at 20-24 of 0.619, at 25-29 of 0.585, at 30-34 of 0.622 and for women over 35, of 0.590.

From this we conclude that the births "deficit" against the Hutterite schedule was evenly distributed across age-groups - i.e. limitation of marital fertility was non-parity specific. That is to say, marital fertility was limited by spacing births over longer periods than the biological minimum, rather than by any attempt to curtail their frequency after a target number of children had been born. This is not surprising since, in mid-XIXth-century Europe, such behaviour was near universal, the alternative mode being confined to certain rich minorities, and to French and certain Magyar peasants[55].

[55] Jackson, "Balkan Demographic Experience," p. 269.

To explain the somewhat wider spacing of births within marriage than was usual at least in western Europe at that time is to enter the realm of speculation. The simplest explanation is that it reflects under-recording of births in the vital statistics tables. But if there is a real residual to explain, it should be borne in mind, firstly that women were "scarce" in a male surplus society, and secondly that their labour was also scarce in a territory which was underpopulated in relation to the available agricultural technology. Notice again how the male surplus was created by (unexplained) excess female mortality in late childhood, and not via maternal mortality; I would suggest, but cannot test, the possibility that Serbian peasant society acted rationally in its unusual solicitude for the well-being of its married women, because of their scarcity, and tried to avoid overburdening them with excessively frequent births.

For all that, the general level of mortality was oppressively high. In 1862/3 mean mortality in the four provinces for which we have drawn our birth-rate data, was 8273 on 216,574 inhabitants, or 3.8%. The birth-rate was 9021, or 4.2%. So despite the fairly early and universal marriage of women, and the correspondingly high level of adult fertility with which this was associated, natural increase was of only 0.4% per annun. The population growth of Serbia as a whole between 1843 and 1863, a still modest 1.183% per annum, probably depended more on immigration than on natural increase.

Still the potential was there for population growth to accelerate sharply when the death-rate fell. Most of that fall would be concentrated on infants and on those still within the fertile period of their lives, rather than among those whose child-bearing period had already terminated.

Just such a reduction was on the point of occurring. According to Jackson's research, crude mortality between 1862 (when vital statistics began to be published) and 1910 fell at an annual rate of 2.2 per thousand, with most of the fall occurring before about 1890. There were no signs of diminution in the crude birth-rate before the late 1880s. So (barring the effect of a short-run crisis in the upheaval years of the late 1870s) Serbia faced an incipient population explosion [56]. In

fact, population rose at 1.8% per annum between 1863 and 1874, and at 2.3% annually between 1884 and 1890.

d) Family Size and Structure

The census provides precise information on the familial relationships within the individual households, so we are able to examine the structure of Serbian families, both rural and urban. Table 3 divides Serbian households in 1863 according to the Laslett classification: that is, to unstructured families, nuclear, stem and multiple families[57].

The unstructured group includes single individuals, frèreches, and households in which no two members were related as parent and child. However, the census tends to overstate the proportion of such groups, because a wife or child with property in his or her own name was treated as an independent unit for the purposes of the census. Where clear evidence was provided that such a "family" was actually an integral part of another, we have amalgamated the persons (and property) of the two, but in many cases, the census did not provide sufficient guidance.

Nuclear families only contain a parent or parents and unmarried children. If, for example, a grandparent comprises part of the household, then the group becomes a stem family. Stem families are defined here as groups where two (ever) married generations are represented, whether or not the younger generation had children within the household. Where more than one sibling within the household was (ever) married, however, the group passes into the category of multiple family. Two-marriage multiple families can be taken therefore to have included two married siblings; three-marriage multiple families were more likely to include grandparents, but could alternatively have included three married siblings. The latter type of family was rare however, and in general large multiple families, containing three or more married siblings were unusual.

Panel I of Table 3 relates to rural families, Panel II to families in the three towns.

[56] See Lazlett's introduction to his *Household and Family*, pp. 28 ff.
[57] Vuk Stefanović [Karadžić] *Srpski rječnik*. (Vienna, 1818, reprint Beograd: Prosveta, 1969), entry for *zadruga*.

Table 3
Serbia, rural family structure, 1863

No of marriages: 5913, Marriages per family: 1.19 , Persons per marriage: 4.30

	unstruct families	nuclear	stem	multiple-families					
Marriages	0	1	2	2	3	4	5	8	all
Familysize	1.73	4.77	6.07	7.35	10.09	13.70	14.67	25.00	8.23
Persons-%	4.66	55.42	8.40	20.62	8.84	1.61	0.00	0.10	31.52
Marriages-%	0	49.95	11.93	24.16	11.30	2.03	0.00	0.14	38.12
Families-%	13.80	59.49	7.10	14.38	4.49	0.60	0.00	0.02	19.61

Note: Rural districts of Podunavlje, Belica, Trnava and Zajecar.

SERBIA, URBAN FAMILY STRUCTURE, 1863

No of marriages: 2710, Marriages per family: 0.85, Persons per marriage: 4.18

	unstruct families	nuclear	stem	multiple-families				
Marriages	0	1	2	2	3	4	5	all
Familysize	1.14	4.13	5.56	6.21	9.38	13.00	15.00	6.67
Persons-%	8.67	72.60	8.30	8.44	1.74	0.11	0.100	10.43
Marriages-%	0	73.51	12.47	11.37	2.32	0.15	0.100	14.02
Families-%	26.87	62.31	5.29	4.82	0.66	0.03	0.000	5.54

Note: towns of Jagodina, Zajecar and Smederevo.

The multiple families shown in Table 3 — of which the Mihajlović family in Figure 1 was an example — will be referred to as *zadrugas*. This is how the term was understood in Serbian society and this usage is sanctioned by Vuk, who defines the *zadruga* simply as "plures familiae in eadem domo."[58] Unfortunately, however, Serbian law attached to the term a stricter definition, designating the *zadruga* as an agreement for the pooling of property rights, and this latter definition materially affected the way in which people were grouped as households in the census. A *zadruga* — in the eyes of the census taker — would be comprised, for example, by the activity of two unmarried brothers who worked or traded as a partnership. Conversely, as noted above, a wife's property (*baština*) held severally from her husband's was not taxed as *zadruga* property even though in other respects this wife enjoyed membership of the extended family.[59]

This divergence between the sociological and legal definitions of *zadruga* probably causes the census to understate the extent to which multiple family households actually existed. It is possible that many so-called heads of household were held by the authorities as personally responsible for their share of the *zadruga's* tax obligations, though in other respects they acted as *zadruga* members. Moreover, to define a household as the persons living under one roof is deceptive, since in some villages, *starešina, domačica* and their young children would live within a central house, while cognate families were grouped in cabins (*sobe*) on the *čair*, or central site of the property. For this reason, too, groups of apparently separate census households may have regarded themselves in practice as single *zadrugas*.

There is a good deal of discussion in the literature of the large *zadruga*, with say, 20, 50 even one hundred members,[60] and although these units were less common than literary evidence would suggest, it is nevertheless surprising that in a survey covering some 36,000 individuals, we find but a single 25 member *zadruga*, the next largest having 19. The

[58] The *zadruga* as an institution is discussed in detail in Jozo Tomasević, *Peasants, Politics and Economic Change in Yugoslavia*. (Stanford, Calif. 1955) pp. 178 ff.
[59] See for example, Stojan Novaković, *Selo*. (1890, repr. Belgrade, 1965) p. 215.
[60] Halpern, "Town and Countryside", pp. 403-8.

rarity of large *zadrugas* like the Mihailovič family may have been an artefact of the census-taker's work. We note, however, from Halpern's study on Kragujevac region that the *zadruga* was more common in this part of Serbia, though it still embraced "less than half" of the population. [61] The *zadruga* was also well represented in some of the Sava valley districts. [62] In the real world of mid-XIXth-century Serbia, we may assume an intimacy of kin-linked co-operation which extended well beyond that indicated by the census. [63]

At least in the eyes of the census maker, Table 4 shows that the average rural family was quite small, with 5.12 members, and the urban family smaller still at 3.84. People living within families without cognates (that is, *inokosni* or "nuclear" families) comprised a majority both of the rural (55.4%) and urban (72.76%) populations. Stem families were not numerous either in town or village, but *zadruga* formation was mainly characteristic of the rural population — 31.5% of persons living within them, and less common in the towns where only 10.4% were members.

In fact, the real distinction lies not between rural and urban families but between farm families and others. In the three towns, the *zadruga* was more in evidence in Zaječar (19.4% of the population) than in Smederevo or Jagodina (6.0% and 6.6%). The reason for this was that 35.4% of Zaječar heads of family were enumerated as farmers, whose family size was 5.5 (compared with 3.6 for all other residents of this town) while Smederevo's farmers accounted for 13.4% of family heads, and Jagodina's, 3.6% — though in each case the farm families were substantially larger than the local average. The same distinction repeats itself in the rural areas: farmer families were in each area of size above the area average, though of course they made up the overwhelming majority of the rural population.

[61] Dragoliub Novakovitch, *La Zadrouga. (Les communautés familiales chez les Serbes.)* (Paris, 1905) p. 79; examination of the 1863 census registers suggests that in some areas it may well have been the dominant form of organization.
[62] Ruth Trouton, *Peasant Renaissance in Yugoslavia 1900-1950.* (London, 1952) pp. 39-44; Novakovitch, *La Zadrouga*, pp. 134-5, 140.
[63] This is the prime concern of Bojana Katić, "Društvena struktura stanovništva Šapca 1862 godine," *Istorijski časopis,* XXXIII (1986) pp. 203-21.

III. Regional economic inequality and underdevelopment.

Our discussion of the content of the registers to the 1863 Census of Serbia demonstrated some of the capacities the document possessed for improving our understanding of the demographic features of Serbian rural society. However, the characteristic which really distinguishes this document from most historical enumerations is the abundance of information included on household assets and incomes. The obvious questions which come to mind when presented with such material relate to the distribution of income and wealth, [64] but we also want to use the document to throw light on economic behaviour and the economic dynamics of the period.

Our first application of the census is to measure the country's national income, because when viewed in aggregative terms, this (and national wealth) is what the census measured by definition. Since this requires aggregating the (rural) district and town returns, we are also able to show the extent of income variations, between districts and between towns. Income shows greater regional variance than we would expect, and a test was designed to ascertain whether this variance was real or the result of locally inconsistent enumerations. After establishing the reality of the variance, the question is then posed as to its causality.

a) Serbia's national income in 1863.

To obtain the aggregate of household incomes, both income and real estate wealth figures were abstracted at an aggregative level for the communes and towns for which registers survive. As noted in Part I, the income figures could not be used for this purpose by themselves, because they exclude income arising from the ownership of real estate capital. But taken together these two sets of figures do provide a basis for calculating total personal income of persons included in the census (including income from real-estate) and

[64] Articles 83, 84, 93.

thence with some small adjustments, an income measure of national income.

To estimate the income flows arising from the ownership of real estate, a rate of return has to be imputed to this capital, but in the absence of an organized public capital market it is not easy to select an appropriate rate. In assessing businesses and farms, the census takers were instructed (if they had no better data) to assume that both business and farm inventories ("mobile capital") produced an annual 12% on their capital value. [65] The available evidence suggests that this 12% is a reasonable return to impute to all forms of capital.

12% was in fact the legal maximum, set in 1836, and reaffirmed in 1860. [66] This seems at first sight a high rate of return to attach to the country's capital stock, even though Serbia was notoriously a country of capital shortage, but it seems well justified. The state, as administrator of the estates of orphans, paid beneficiaries at 10% on capital deposited, but lowered its rate to 6% in 1863. Using these rates as a reference point in discussing the probable income flow from real estate capital in the 1863 census, the Finance Ministry's statistical publication observed that "6% or 10% would be far less than reality of course." [67] If the Finance Ministry had any intention of equalizing the burden as between the taxation of capital and that of other income sources, then it must have reckoned that capital returned 18-20%. This is improbably high. Secured loans could be obtained from local authorities and church funds at 10-12%, rates which were regarded as mildly privileged. Risk-bearing interpersonal debts were contracted at 12% to 36% and these rates were considered officially as inviting personal and financial ruin. [68] 12% was the borderline, and by inference approximated to the marginal efficiency of capital. As late as 1883, 12-15% was the going

[65] John R Lampe, "Financial Structure and the Economic Development of Serbia, 1878-1912." (Unpublished Ph.D. thesis, U of Wisconsin, 1971) p. 97 and note.
[66] *Državopis Srbije*, II, pp. 78, 90.
[67] Ibid p. 83.
[68] A A E. CCB France. Archives du Ministère des affaires étangères. Corresp. Commercialé. Belgrade. [ ] t. 7. Despatch of 20 Jan 1888.

rate on mortgages, [69] so confirming that real estate should have been expected to generate an income flow at least at 12%.

We also have to standardize currencies. The decision was taken to express all money figures in dinars, even though this currency had yet to be introduced. This accords with the usual practice of economic historians writing on nineteenth-century Serbia. The census denominated holdings of fixed capital assets in gold Austrian ducats, and monthly incomes in silver thalers. We have converted these at the exchange rates prevailing at the time into Turkish piastres, but have expressed our results in the dinar currency of Serbia which was introduced in 1873, and set at par with the franc in 1878. At this time the old currency was converted at the fixed rate of 0.198 dinars per piastre. [70] No material movement had occurred in the exchange value of the piastre, officially since 1866, [71] and in practice since 1863, when the sterling-piastre rate was noted as one to 125. [72]Consequently, we take the ducat as 12.05 dinars and the thaler as 5.16 dinars.

Because of the gaps in the census, most notably the absence of registers for Belgrade, the capital city, we have needed to create some proxy data. The city's real estate capital we know from the published abstract. [73] We have assumed that its income from sources other than from capital, per capita of its population, exceeded that of the average of the other towns by the extent to which builders wages in Belgrade exceeded their average for urban Serbia, that is to say, by 46.4%. [74] Fortunately the (censusable) population of Belgrade was only 14,760, or 1.3% of national population, so this procedure is unlikely to introduce serious errors into the calculation. And since the Crown

[69] In connection with the census, the official statistical publication calculates a ratio of 2.33 thalers to the ducat, and for 1863 exports, 60.86 piastres to the ducat. *Državopis Srbije*, II pp. 89, 111. The piastre-dinar conversion is given in Miodrag Ugričić, *NovčVani sistem Jugoslavije*. (Belgrade, 1967) p. 63.

[70] Lampe, Thesis, p. 112.

[71] Report of Consul-General Longworth on the Trade of Serbia in the Year 1863, p. 243. (C. 3478 of 1865) Great Britain. *Parliamentary Papers*, 1865 LIII.

[72] *Državopis Srbije*, II (Belgrade, 1865) pp. 12-17, 22-92.

[73] Builders wages in 1863 in Belgrade were 12 piastres 37 para, for all towns 8 piastres 33 para, see *Državopis Srbije*, II p. 122.

[74] Longworth's report for 1863, p. 221.

was untaxed, we have added onto this figure the budget estimate for the Civil List, (£ 20,000 sterling). [75]

Since we also lack data for income (other than from fixed capital) for 8 out of 60 rural districts and 17 out of 38 provincial towns, we have had to make assumptions about their probable income level. The published abstract provides fixed capital figures for all towns and villages. In the case both of the towns and the villages, the per capita fixed capital of those places for which income data is missing was lower than that of those for which it was obtained, in the case of the villages, by 24.84% and in that of the towns by 16.3%. We therefore make two alternative assumptions concerning income other than from capital where explicit data is lacking. An upper bound is set by the assumption that incomes other than from real estate capital in places for which we lack income data were equal to those for which we have data. The lower bound is set by the assumption that incomes for these places were lower than those for which we have income data to the same extent as their per capita real estate capital was lower (towns being compared with towns, rural areas with rural areas). The range so created is not a wide one for the out-turn is a lower bound for total income some three percent below the upper. The average income per head of rural dwellers was 110.6-113.6 dinars, and that of towns-people was 177.8-188.3.

As already noted, Turkish subjects and migrant gipsies were excluded from the census. But we need to estimate the contribution made by these two groups to national income. This can only be done approximately, but this matters little, since their numbers were small. Both groups were usually described as poor. [76] So for the Turks, though an urban group, we assume an income per head equal to the average of Serbian rural dwellers (which was significantly smaller than the urban average). The migrant gipsies were probably poorer still. They owned no real estate and lived rurally. It would therefore be

[75] For the Turks, see Andrew A. Paton, *Serbia, or a residence in Belgrade*. (London, 1845) pp. 274-5.
[76] Longworth's report on Serbia for 1863, p. 221.

appropriate to credit them with per capita incomes equal to those of th average rural dweller, without boosting this figure by any allowance for income from real estate capital. Including Turks and migrant gipsies, rural income per head is revised down fractionally to 110.4-113.4 dinars, and urban income 176.5-186.9 dinars. The sum of personal incomes of all inhabitants, including Turks and gipsies, was therefore 130.6-134.7 million dinars, or 116.3-120.0 dinars per head.

Net national income (at market price) closely approximated to the sum of personal incomes, because of the insignificance of the institutional sector. There were some small external payments by the state, including a budgeted annual payment of £ 21,231 sterling tribute to the Pone, while the servicing of external debt required £ 11,200 stg.[77] Taking 25 dinars to the £ sterling, an appropriate deduction is made from national income, of 810,775 dinars. State incomes included £ 3,300 rent on state lands. Taking these adjustments into account Serbia's net national income at current market price in 1863 amounted to 129.9-133.9 million dinars, or 115.7-119.3 dinars per head.[78]

We can also estimate the national capital stock. The capital item in the census captures only the stock of real estate capital and exludes circulating assets. Real estate capital amounted to 220.4 million dinars, 172.3 million rural, 48.1 million urban. However, the stock of cattle, pigs and small livestock in 1866, when valued at 1863 prices amounted to 171.31 million dinars. This stock was lower by 10% than in 1859,[79] but if we treat it as the mobile capital stock of the farm sector in 1863, we may infer that rural capital stock in that year was about 343.6 million dinars. This excludes any allowance for the value of implements. Division of this figure by total rural income that year

[77] Note that this includes notional income from owner-occupied residential property.
[78] Comparative figures for 1859 are given with the the 1866 livestock census in *Državopis Srbije*, IV (Belgrade, 1870).
[79] Estimated from Walther G Hoffmann, *Das Wachstum der deutschen Wirtschaft seit der Mitte des 19 Jahrhunderts.* (Berlin, 1965) on the basis of a 10.05 Bn. mark NSP in 1863 on population of 38.6 million, and a mark of 1.25 francs.

implies a rural capital output ratio of 2.96-3.04; and if we apply the midpoint of this ratio to midpoint national income (in order to allow for the circulating capital of non-farm businesses) the national capital stock (including the value of land and mobile assets) would have been about 396 million dinars. In fact this figure tends to understate since it takes no account of the value of farm equipment.

The level of national income per capita at 116-119 dinars was low by European standards of the period. Taking the dinar as equal to the franc in exchange value, a rough comparison may be made with Hoffman's estimate of German net social product in 1863. This was equivalent approximately to 326 francs.[80] By comparison, the indicator-driven guesstimate for Serbia's per capita GNP given by Bairoch for the 1860s (expressed in "constant dollars of 1960") looks excessively optimistic as it amounts to 62% of that for Germany, whereas we would reckon it at but 36%.[81] However, Serbia's per capita income was probably similar to that of Hungary. According to Katus, Hungarian GDP per head in 1867 (current price) was 110 crowns (115 francs).[82]

Research in progress indicates provisionally that in constant price per capita terms, Serbian national income in 1910 was about 10% smaller than is indicated by our estimate for 1863, suggesting a stagnant or declining long-term trend. But in order to compare the national income figure for 1863 with estimates relating to later periods (or indeed with national income elsewhere in the 1860s) it is desirable to ascertain qualitatively whether the year in question was one of higher or lower than average prosperity for the period.

The evidence here is not unambiguous. At first sight, 1863 was an abnormally bad year. A serious drought, recollected by Jakšić in 1874

[80] Paul Bairoch, "Europe's Gross National Product: 1800-1975," *Journal of European Economic History*, V (1976) p. 286.
[81] L. Katus, "Economic Growth in Hungary during the Age of Duallism (1867-1913) A Quantitative Analysis," *Social-Economic Researches on the History of East Central Europe*. ed. E Pamlenyi (Budapest, 1970) p. 118.
[82] Vladimir Jakšić, "Stanje zemljoradnje u Srbiji," *Glasnik srpskog učenog društva*, XLI (Beograd, 1875) p. 91.

as "worse than any in living memory" devastated the harvest of the Banat.[83] It also affected the immediate environs of Belgrade. Nevertheless, the hay crop was "made in good conditions and very abundant",[84] and grain was exported at high prices to take advantage of distress conditions in Austria.[85] Exports in general, both in quantity and volume, were somewhat above the trend line for the period. Yet commerce, at least in Belgrade, was "at a standstill" following the Belgrade bombardment of 4 June 1862. However, it seems to have picked up after March 1863, so that by summer, it was once more in a relatively flourishing condition.[86]

Health conditions in 1862 had been bad enough almost to extinguish natural increase.[87] But they were improving in 1863. Even so, a report of "dreadful pestilence" in Jagodina[88] implies they were still bad. So economic conditions in 1863 may be taken as no better than average for the early 1860s.

b) Rural regional income variance.

The range of incomes in the rural districts for which we have income data is displayed in Table 4, and is mapped on Figure 3. As the Serbian rural economy was structurally homogeneous, with smallholders working primarily for subsistence, and with virtually no non-farm activity, the regional divergences shown are remarkably wide.

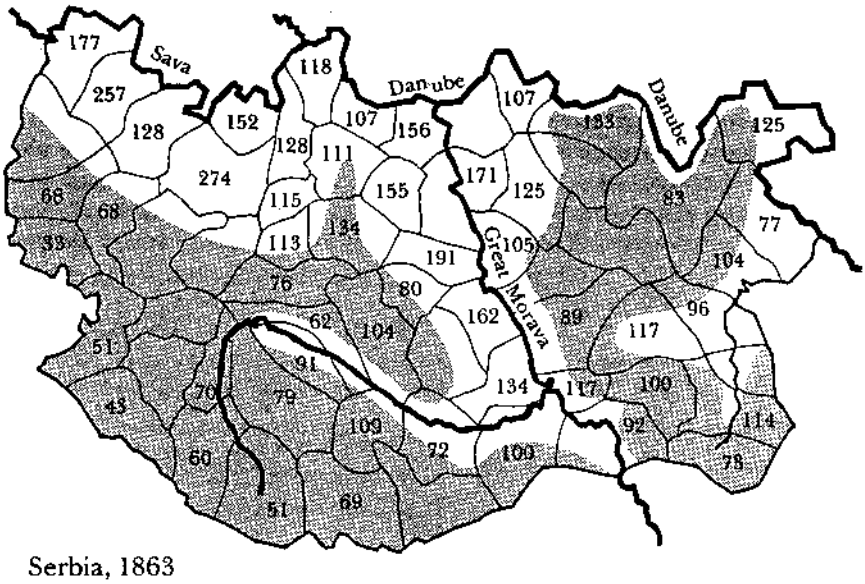
[83] A A E. CCB t.3 1863/4. Report of 5 Jul 1863, fo. 64.
[84] Longworth's report on Servia for 1863, p. 249.
[85] *Istorija Beograda, II Devetnaesti vek.* (Belgrade, 1974) pp. 148, 273; A A E. CCB t. 3. Reports of 15 Mar 1863, fo 15 and 6 Apr 1863, fo. 18.
[86] Marvin R Jackson, "Comparing the Balkan Demographic Experience," 1860 to 1970, *Journal of European Economic History*, XIV (1983) p. 269.
[87] "Popis ljudstva Serbie u godini 1863," *Državopis Srbije*, II p. 15.
[88] Fred Singleton and Bernard Carter, *The Economy of Yugoslavia*. (London, 1982) p. 215.

Table 4
Serbia 1863: Dispersion of per-capita income by rural districts

No.	DISTRICT	DINARS PER CAP	No.	DISTRICT	DINARS PER CAP
1	TAMNAVA	273.88	31	JOŠANICA	99.82
2	POCERINA	256.94	32	ZAJEČAR	96.46
3	LEPENICA	191.11	33	BUGAR-MORAVA	92.44
4	MAČVA	176.53	34	TRNAVA	91.08
5	MORAVA-POŽAREV	170.70	35	PARAĆIN	88.55
6	BELICA	162.06	36	POREČ-REKA	83.46
7	PODUNAVLJE	156.32	37	KRAGUJEVAC	80.41
8	JASENICA-SMEDE	154.55	38	DRAGAČEVO	79.37
9	POSAVA-VALJEVO	151.86	39	BRZA-PALANKA	76.70
10	TEMNIĆ	134.50	40	CRNAGORA-RUDNIK	75.78
11	JASENICA-KRAGU	133.73	41	SVRLJIG	72.82
12	GOLUBAC	133.07	42	TRSTENIK	72.25
13	POSAVA-BEOGRAD	127.76	43	POŽEGA	70.20
14	POSAVO-TAMNAVA	127.59	44	STUDENICA	68.91
15	KLJUČ	125.47	45	PODGORA	68.33
16	MLAVA	124.99	46	RADJEVINA	68.31
17	VRAČAR	118.12	47	MORAVA-RUDNIK	61.82
18	BOLJEVAC	117.50	48	ARILJE	60.43
19	RAŽANJ	116.62	49	MORAVICA	51.45
20	KOLUBARA-BEOGR	114.83	50	RAČA	51.32
21	TIMOK-ZAGLAVAK	114.28	51	ZLATIBOR	43.13
22	KAČER	112.86	52	AZBUKOVAC	33.05
23	KOSMAJ	111.11	53	HOMOLJE	n.d.
24	KARANOVAC	109.15	54	KRUŠEVAC	n.d.
25	GROCKA	106.89	55	ZVIŽD	n.d.
26	RAM	106.76	56	JADAR	n.d.
27	RESAVA	105.16	57	KOLUBARA-VALJEVO	n.d.
28	KRAJINA	104.15	58	KOŽNICA-KRUŠEVAC	n.d.
29	GRUŽA	104.09	59	LEVAČ	n.d.
30	BANJA	100.16	60	CRNAGORA-UŽICE	n.d.

Sources. Calculated from original registers, except for following:
Svrljig: A S. MF A I-118 / 1864, no. 5039 of 26 Sep 1863.
Jasenica: A S. MF A I-118 / 1864 no. 1863.

Figure 3



Serbia, 1863
Per capita income by district in dinars ▒ upland

Rural incomes ranged from the 33.05 dinars per head in up-country Azbukovac district on the western border to 256.94 dinars in Pocerina and 273.88 in Tamnava, both districts in the fertile Sava valley. From the accompanying figure, it can be seen that there is a strong association between terrain and income. Had such divergences been associated with regionally concentrated industrialization, we would say the country was suffering from extremely severe developmental imbalances. The dispersion of income between Tamnava and Azbukovac, — of 8.3 times — far exceeded the 1: 2.96 income ratio between Macedonia and Slovenia in 1976, and Yugoslavia was a country with a particularly serious regional problem. [89]

Such huge inequality in 1863 as between districts in a compact

[89] Stevan Ignjić, *Užice i okolina*. (Titovo Užice, 1967) p. 74.

little country which was almost entirely agricultural and barely monetized is so striking as to raise the question whether the census figures are indeed a reasonable guide to the underlying reality, or whether they merely reflect local biases resulting from different assessment and valuation practices. A cross-check was therefore applied to these figures by using the 1866 and 1867 surveys of livestock numbers and cultivated areas, disaggregated to district level. These were applied to the earliest acceptable regional crop and fodder yield statistics (for 1901) to estimate per capita incomes from farming, at 1863 prices and on 1866 population. This exercise produces a range of incomes similar overall to those in Table 4, and with a dispersion of incomes between districts of between 6.1 and 12.2. The census figure of 8.3 lies comfortably within this range. Therefore the measured regional variance of incomes in the 1863 census needs not be explained in terms of procedural defects, though these no doubt existed.

Although the spatial variance recorded for 1863 lies comfortably within the anticipated range, it is likely that harvest conditions varied markedly from year to year in their impact on any particular locality, relative to their impact on the country as a whole. So in part the regional dispersion showed by the 1863 census was the product of conditions peculiar to that year, and not a reflection of permanent productive variations. (For example, the Belgrade region was probably one of the most productive in a normal year, but performed relatively badly in 1863, when as we know, it was afflicted by drought, from which the Sava valley seems to have escaped.) Still, the two ranking orders are strongly correlated, especially at the lower end of the scale.

At the lower end of the scale, both the Table 4 and cross-check figures indicate that the districts of Užice region were normally among the least productive in the country, a fact which was well known to contemporaries. [90] In Table 4, median measured income per head for the four Užice districts, Rača, Zlatibor, Moravica, and

[90] Arhiv Srbije [A.S.] MF A I-118 / 1864 no 4426 of 27 Aug 1863.

Požega averaged 54.0 dinars, or 51% of the median of 106.0. The cross-check figures indicate an average of 39%-46.2% of the median. Thus although the dispersion of incomes by region had an important transient component it is also likely that areas in the south west of the country were permanently disadvantaged by an income level no more than half the median level, and probably thus about a quarter of that of the most prosperous. This provides a useful reminder that regional disparities of modern Mediterranean magnitudes could and probably did long antedate the commercialization of economic life, to say nothing of industrialization.

As for Azbukovac, the worst performer in 1863, it was probably not always condemned to such poverty, but the 1863 figure may well have been valid. While the census was being carried out, the prefect of Podrinje region (of which Azbukovac district formed part) complained that the value of property in Azbukovac and in Radjevina was so low that the banding procedure for tax allocation left nearly all peasants in the same (minimal) tax bracket. [91]

c) Intra-district income distribution.

Having noted the wide dispersion of income as between rural districts we turn to examine distribution between families within the same district. Two measures were used to test income inequality between persons, the Gini coefficient of per capita income, and the percentage of median income to mean income. The results are displayed in Table 5 below.

[91] For Trnava distribution is obscured by the failure of the census to differentiate the use of 58% of the area of farmland.

Table 5
Coefficients of income distribution in certain rural districts of Serbia in 1863

	income per cap. (dinars) mean	median	median/ mean (%)	Gini coefft
Trnava	90.55	80.91	89.3	0.1796
Zaječar	92.54	84.98	91.8	0.0666
Podunavlje	156.67	129.25	82.5	0.2789
Belica	163.09	149.40	91.6	0.2017

The results are clear cut. The skewness of income in the villages was slight; there ruled an equality of near-poverty, especially in the poorer districts, while the richer rural districts were more differentiated.

The contrast between extreme inter-district income inequality and extreme intra-district equality must certainly be an indicator of the low geographical and occupational mobility of Serbia's population at this time, and of the low penetration of market forces. It is our purpose in the following sections to discover why such great regional variances existed, notwithstanding their low internal variances.

d) Rural landownership in Serbia in 1863.

Landownership in rural Serbia was virtually universal, and mass self-sufficient smallholding was one of the supreme props of the Serbian state. This was made easy by the low pressure of population, and the rarity of large estates. In 1866, only 15% of the country's surface area was under crops, meadows and fruit trees. The 1863 census confirms that landlessness was negligible. In Trnava 2.7% of the population were members of landless families, while 2.3% were landless in Belica, 2.2% in Podunavlje, and 0.6% in rural Zaječar. Most of the landless were gipsy labourers and artizans. Even for these, landlessness was probably by choice, for unclaimed but cultivable land was still fairly abundant, and communes were required to parcel waste ground out to those who needed it.

Despite the lack of population pressure, most peasants took no

more land under the plough than the minimum they needed for subsistence. Holdings in 1863 (Table 6) were remarkably small, even though they included a substantial amount of enclosed land. These closes were a form of property which sat uneasily with the prevailing concept that private ownership could only be vested in cultivated land. They were fragments of woodland pasture which had been enclosed, more or less legally, by livestock owners who found their prosperity threatened by the destruction of the public woodlands, on which they counted for grazing, especially for pigs. As deforestation was then proceeding with uncontrollable rapidity, so the number of enclosures was multiplying, despite the hostility of the communes to this process.

Table 6
Rural Serbia in 1863
cultivation (in hectares) per family

Srez	Holding size	Arable	Close	Meadow
Podunavlje	3.878	2.474	0.572	0.441
Belica	2.898	1.374	0.464	0.553
Zaječar	4.474	2.177	1.062	0.779
Trnava	2.913	?	?	?

Note: a large proportion of the land held in Trnava was simply designated "land".

The unadjusted mean of these holdings is 3.541 hectares, of which closes (in Podunavlje, Belica and rural Zaječar) comprised 18.65%, leaving cultivated land and meadow at 2.88 hectares. Given the lack of restraint on expanding the cultivated area, (less than 15% of the total surface) the small size of the holdings was in considerable measure discretionary, and resulted from the reluctance of peasants to expand cultivation.

The investment patterns of peasants in respect of land holding can be shown for Podunavlje district, because the disaggregated capital values of the individual assets were carried over from the census blanks into the registers. Podunavlje district, the hinterland to the river port of Smederevo, was a relatively rich and commercialized farming area. A breakdown of properties according to the real estate capital of the proprietor (in dinars) in Table 7 shows the pattern of holdings, by value:

Table 7
Distribution of wealth in Podunavlje rural area 1863
in terms of real estate assets held

ASSETS HELD (dinars)	1-999	1000-1999	2000-2999	3000-3999	4000-4999	5000-5999	6000-6999	7000-7999	8000-8999	9000-9999	10000-
MEAN VALUE	550	1475	2470	3459	4434	5420	6473	7312	8308	9670	18772
HOUSEHOLDS	328	370	291	173	86	56	26	16	14	11	21
HHLD SIZE	4.2	5.2	5.8	6.4	7.0	7.6	7.7	6.7	9.3	8.2	8.5
Percentage distribution of capital held according to type of asset											
ARABLE	48.6	41.8	36.0	32.2	29.6	27.7	25.9	24.0	25.5	21.1	13.4
MEADOWS	7.9	14.4	16.3	18.6	19.4	17.2	18.7	14.9	18.8	19.2	9.4
ORCHARDS	0.7	1.3	1.7	1.9	2.2	1.7	1.8	2.1	2.0	2.2	1.1
VINEYARDS	12.3	8.5	6.8	5.2	4.8	4.8	5.0	4.9	3.0	3.9	2.5
CLOSES	3.4	7.9	14.0	17.2	17.3	18.1	18.0	20.1	28.6	20.2	21.7
GARDENS	0.0	0.0	0.0	0.1	0.6	0.6	0.0	2.1	0.0	2.3	0.0
SITES	9.2	5.6	3.8	3.2	2.4	2.5	2.6	2.9	2.0	1.8	1.2
LAND-OTHER	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.4
HOUSES	17.6	19.8	21.0	21.1	22.8	24.1	24.7	20.6	15.2	21.0	17.3
WATERMILLS	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.1	1.4	0.6	6.6
SHOPS	0.0	0.0	0.0	0.1	0.6	0.1	0.0	5.1	0.0	3.7	13.7
TAVERNS	0.0	0.6	0.3	0.3	0.2	2.8	2.9	3.0	3.6	4.0	12.7
ALL-LAND	82.4	79.5	78.5	78.3	76.3	72.7	72.1	71.1	79.8	70.7	49.7
VALUE OF ARABLE PER CAPITA (dinars)											
	63	119	153	173	187	198	218	262	228	249	297
VALUE OF VINEYARDS PER CAPITA (dinars)											
	16	24	29	28	30	34	42	54	27	47	56
VALUE OF MEADOWS AND CLOSES PER CAPITA (dinars)											
	15	64	129	192	232	253	309	383	424	466	688

It is clear from Table 7 that more substantial householders in Podunavlje preferred to add to their pastoral resources — meadow and close — far more than they wanted to add to their arable or vineyards; this tendency would be made even clearer when it is taken into account that large capitals were associated with large families, so that the behaviour of the larger farmer was also conditioned by his need for more subsistence crops and wine than the smaller.

Partly for the same reason — larger family size — the larger Podunavlje peasant allocated at least as much of his resources as the smaller to housing, but he also aspired to much better housing as well as more floorspace; considering the rise in value of residential properties from 300 dinars at a capital of around 1500 dinars to 1750 dinars for the largest properties, housing conditions must have been strongly differentiated, and their improvement a high priority in the disposal of marginal capital.

At the top end of the scale, wealthy peasants diversified into holding interests in shops, warehouses, stables, watermills and taverns. But the principal conclusion which emerges from Table 7 is the high marginal propensity to acquire (or lose) closes and meadows (as opposed to other types of land) at all levels of capital. This was not peculiar to the district of Podunavlje. The same tendency (in terms of land areas) for larger peasants to diversify sharply away from arable and vineyard cultivation was apparent also in Belica and (somewhat less consistently) in rural Zaječar district, and — by inference — throughout Serbia [92].

Per-hectare valuations of the different types of land are shown in column 1 of Table 8, below. They show that pastoral resources were much more highly valued than arable land. Of the more substantial aggregates, meadows were valued at 820 dinars, closes at 659, and arable was cheapest of all at 306. When we consider that a close was usually a fenced-off fragment of woodland, we can see why peasants were so reluctant to break in and cultivate more ploughland than they had to. Cultivation would deplete the value of their holding rather

[92] Jakšić "Stanje zemloradnje," p. 101.

than enhance it — and reduce their capacity to hold livestock by more than the yield of the tillage would compensate them.

This supposition is consistent with the historical evidence. Over the preceding twenty years the cultivated area had been rising less rapidly than population [93], yet the authorities reckoned there to have been few recent clearings for cultivation, despite the growing tendency to enclose formerly public land. A glance at the international trade figures will quickly indicate why. Livestock exports were running strongly, but exports of grain were derisory. (In 1862 animals and animal products accounted for 79.3% of all exports, vegetable and fruit products 1.6%.) Farmers appear to have calculated that it was not worthwhile raising grain for the market if they could offer it livestock. If they had livestock to sell, they reserved the produce of the cultivated land for subsistence needs. But if they lacked livestock, then they had to sell grain on local markets. The preference for the sale of livestock was discretionary for those peasants in a position to do so, for in Podunavlje and in Belica they were occupying some of the richest potential grain-bearing land in central Europe.

Vineyards were the most expensive form of agricultural land, worth 3,743 dinars per hectare on average in 1863. In part their dearness reflected the high cost in labour and deferred gratification in laying them out. Even so the Podunavlje statistic signals, paradoxically, that peasants disposing of relatively valuable holdings of real estate eschewed more than a subsistence minimum of this most expensive of assets, while poor peasants were relatively highly committed to viticulture. The smallest holdings held 12.3% of their assets as vineyards, while those disposing of 8-10,000 dinars of assets held around 3.5% of their assets in this form.

It would be relatively simple to dismiss this contrast by claiming — with the literature — that wine was a subsistence good that every household tried to produce, were it not that, apart from wheat, wine was the only cultivated commodity in Serbia which at that time

[93] Michael Palairet, "Serbia's Role on International Markets for Silk and Wine 1860-1890," *Acta Historico Oeconomica Iugoslaviae*, IV (1977) p. 168.

enjoyed a significant internal commerce. Our own estimate is that about one third of the wine harvest passed into trade, even though exports in the early 1860s were negligible[94]. Podunavlje district was a rising centre for the trade in its wines, which were not highly regarded, but "much in demand by consumers in the capital who accept them providing they are cheap[95]". (If they wanted better wine, they would import it from Hungary.) On the other hand, larger scale commercial vinegrowing seems to have been in decline in 1863. Commercial vinegrowers complained not only of a lack of export outlets, but also of competition from small-scale growers who were moving into their home market and accepting lower returns[96]. So it looks as if the small peasant, lacking the resources to maintain and sell livestock, had great need of a vineyard, not to provide the daily tipple for his family, but to earn the cash he needed, and that these small peasant holdings to a large extent supplied the market.

The other high-value form of agricultural land held by the peasants of Podunavlje in 1863 was market gardens, which were worth 1,231 dinars per hectare. However, these were relatively few, and none were held by the smaller peasants, even though market gardening offered a high return both to land and to labour. This was because, in the 1860s, the only people who knew how to operate them were itinerant Bulgarians from the Ljaskovec district (in the Stara Planina)[97]. The gardens were therefore held mainly for renting to the Bulgarian gardener artels, and so tended to be held by the more substantial proprietors.

Considering the abundance of public land exploited as open pasture, land prices were surprisingly high. Only arable was moderately priced, probably because well-off peasants sought little more than a subsistence minimum, while poorer ones might secure some arable under the homestead law. Stockraising land, however, was dear. The

[94] AAE CCB t.6 despatch of 8 Jun 1883.
[95] Kosta Popović, *Put licejskih pitomaca po Srbiji godine 1863*. (Belgrade, 1867) p. 123.
[96] Kliment Džambazovski, "Bugarski baštovani kao pečalbari u kneževini Srbiji," *Balcanica*, IV (1973) pp. 225-36.
[97] As in Lampe & Jackson, *Balkan Economic History*, p. 186.

availability of good water meadows tends to be finite, while the communes resisted letting their residents carve out closes. It has been assumed that during the 60 years before World War I, the rising pressure of settlement caused land values to spiral[98]. But when we compare Podunavlje land prices in 1863 with those of Smederevo region in 1905, we are struck by the sluggishness of their upward movement, considering the near doubling of population density. The largest rise was in the value of the closes, those wasting and ever more precious adjuncts to the livestock sector. The price of arable rose 34% over 42 years; but one should allow for a rise in the price of maize and wheat over this period of 16.1% and 7.2% respectively[99]. Vineyard prices were depressed in 1905 because few Serbian producers had been able to adopt the new high-yielding techniques that had come in after the phylloxera crisis, and because the world market was hopelessly glutted; while market gardening, from being a jealously guarded trade mystery in the 1860s, was now a commonplace activity.

Table 8
Land prices Smederevo region 1863-1905
(Dinars per hectare)

Type	1863	1905
Vineyard	3743	1820
Garden	1231	661
Meadow	867	502
Close	659	1220
Orchard	466	797
Arable	306	410

Source for 1905 data: *Statistički Godišnjak Kr. Srbije*, 1907/8. p. 241.

[98] Smederevo grain prices for 1863 and 1905 from *Državopis Srbije*, II, p. 122 and *Statistički Godišnjak Kr. Srbije*, 1905 p. 312.
[99] Michael Palairet, "The Influence of Commerce on the Changing Structure of Serbia's Peasant Economy 1860-1912." (Unpublished Ph. D. thesis, University of Edinburgh, 1976) p. 143.

e) Sources of regional income inequaity

The study of land holding and land use in Podunavlje district indicates that relative affluence was associated with access to adequate (preferably enclosed) pasture and relative poverty with the lack of it. It does not, however, tell us about the formation of income, other than that generated directly by the ownership of landed estate. To explain the wide dispersion between districts in per capita income, we need to identify the independent variables on which income depended. Ideally for such a comparison, we would need disaggregated data for a representative sample of different areas. However, we can endeavour to work within the limited context of four rural districts for which we have a breakdown of capital and income by households. A particularly useful comparison is made between conditions in two contrasting districts, lowland Belica (income per head 162 dinars) and upland Trnava (with 91). These districts were chosen because at the turn of the XXth century, Belica district generated the largest per-capita surplus of grain in Serbia, and Trnava the largest deficit [100]. This gives some indication of their agricultural potential. At the household level, income (other than from real estate capital) was clearly dependent in the first place on the amount of labour disposed. It probably also depended on the capacity of that household to supply the market with livestock, since this was regarded by the census takers as a specific, important income source, and it may, thirdly, have depended on the land-labour ratio.

Our first task was to ascertain the proportion of the population which comprised the labour force in each district, because the census takers clearly regarded the number of able-bodied persons in a given family as the crucial determinant of its well-being. We define the labour force of each household, as a result of various tests against

[100] Families with larger areas per head enjoyed higher incomes than those with smaller holdings, but only because of the return to capital they enjoyed. Families with sub-optimal holdings would have to pay rent. But the hypothesis that smaller peasants lacked the landed resources to utilize their labour to the full, or that their marginal labour product tended toward zero can be rejected with confidence.

earned income, as comprising its able-bodied male and female members between the ages of 16 and 59 inclusive. We have followed the practice of the census takers by excluding soldiers, convicts and persons with disabilities. No ruling was made from the centre about assessing the relative productivity of male and female labour, and the enumerators seem to have appraised the contribution made by women according to local and individual conditions. For example a widow deemed to be heavily burdened with young children would usually be treated as having no income from labour, whereas a farmer's wife or adult daughter was treated as a member of the labour force. Taking LM as the number of able-bodied adult males per family and LF the number of adult able-bodied females, we can express the best-fit relationship between familial income (in dinars, other than from fixed capital) and the labour force as a series of stochastic equations of the form:

$$\text{INCOME[DISTRICT]} = a.LM + b.LF + \text{constant}$$

where a' is the productivity of male labour, and b' the productivity of female labour. The values of a' and b' for our four rural test districts are shown in Table 9 below.

Table 9
Female labour productivity as a proportion of male labour productivity, four rural districts, Serbia 1863

District	earned income	a	b	b/a	const.	adj. R^2
Belica	137	319	242	0.759	-48.4	77.8%
Trnava	76	206	72	0.349	28.8	76.0%
Zaječar	64	132	82	0.621	79.8	65.3%
Podunavlje	102	209	187	0.895	17.9	35.3%

Our finding shows that the relative contribution which females made to household income was not constant but varied strongly between areas. Moreover, it is clear that in the higher income areas, much more intensive use was made of female labour than in the lower

income areas, so the extent of female labour-force participation is likely to be a significant explanatory variable of inter-district income variance. In districts where female labour was heavily committed to the farm economy, its contribution to measured familial income was not much less than that of the males. In Belica district the farm output of an adult woman was 76% that of an adult man. In Podunavlje it may have been higher still, but the low regression coefficient here warns us that factors not picked up in the equation may have been of more significance. In contrast, in Trnava, a woman's labour contributed but 35% of that of a man. The safest conclusion from this is that women were much less engaged here in the farm economy. So in effect, a family of balanced sex composition in Belica district disposed of 30% more labour than its counterpart in Trnava. In fact the dispersion is somewhat wider than this because the population in Belica included a higher proportion of adult males than in Trnava, and a lower proportion of adult females. Thus the labour force in Belica (in adult male equivalent units) was 44.4 of the population, and in Trnava to 33.8%.

Labour force size and utilization was not the only variable affecting total household income. If there had been significant pressure on landed resources, such that the labour force could not have been fully employed, then the land-labour ratio would have been a significant income determinant. This variable was tested against earned household income, but as it was found that there was only a weak and insecure association with earned income it was discarded [101]. Considering the amplitude of the uncultivated margin, this was not surprising.

Two independent variables, labour force size, LF and the extent of earnings from livestock sales, LSALES, were then tested against household earned income. For each district, the value of LF for each household is taken to be the combined male and female labour force it

[101] The average product of labour was less differentiated between districts than the marginal product. This is indicated by the negative constant in the equation for Belica, and the positive constant for Trnava.

disposed of, with female labour expressed in the male-labour equivalent prevailing locally as calculated above.

The variable LSALES (livestock sales for each household) had to be ascertained indirectly, because most of the entries in the registers do not quantify the earnings each household made from the sale of livestock. However, if part of the income of a household arose from "mobile property" (that is to say, the sale of livestock) this fact was duly noted in the census. Moreover, the enumerators for certain villages in Trnava district transferred to the registers the disaggregated information on income which had been provided on the original census blanks. As a result, we know the cash contribution made by livestock sales for 118 Trnava households (as well as that for families for which it was zero). With these 118 households, we found that incomes from livestock sales were so strongly associated with the amount of real estate capital they held as to permit the use of the real estate capital figure as a proxy for livestock sales. Where LSALES, the income from livestock of a family in dinars per year, was greater than zero, LSALES was related to CAP, the dinar value of that family's real estate, by the expression:

$$\text{LSALES} = 0.02824 * \text{CAP} \ (+/-0.0017) + 9.1263 \ (+/-3.462)$$

This equation explains 69.1% of the variance between LSALES and CAP. This relationship was employed as a proxy for establishing the value of LSALES (for households that sold livestock) for the Belica and Trnava records.

The two independent variables LF and LSALES were then tested against household-earned income. A stepwise regression of labour force according to district, (LF[SREZ]) and income from the sale of livestock (LSALES) was run against earned income (INC[SREZ]) and established the following equations:

$$\text{INC[BELICA]} = 223.9 * \text{LF[BELICA]} + 5.64 * \text{LSALES} - 53.$$

$$\text{INC[TRNAVA]} = 166.5 * \text{LF[TRNAVA]} + 1.33 * \text{LSALES} + 36.$$

In these equations, LF[BELICA] treats female labour in Belica as 0.76 times as productive as male labour, LF[TRNAVA] as 0.35 times.

The first equation explains 86.5% of the variance (adjusted R^2) in income between households in Belica, the second 77.6% of that in Trnava. In both cases F significance tests showed there was no possibility of this result being reached randomly. We already observed that in rich Belica, women were much more actively engaged in the income-generating labour force than in poor Trnava, (the ratio of adult male-equivalent labour to population in Belica being 31% higher than in Trnava). Now we also learn that the marginal product per unit of labour (in adult male-equivalents) was around 34% higher in Belica as well [102]. In qualitative terms, households in rich Belica seem to have made more intensive use of the labour of their women, because the rewards from marginal effort were markedly higher than in poor Trnava. In the poorer district, there was less incentive to mobilize the labour of women, since it was more difficult to make worthwhile use at the margin of the labour already engaged on the farm.

Livestock sales were also of significance. These sales of course represent not only a return to capital but also to labour, though these returns cannot be separated. These equations indicate however, that for a given capital stock in real estate, Belica peasants obtained 4.24 times the revenue from livestock of their counterparts in Trnava. As, moreover, the amount of real estate capital disposed of per family in Belica was also 93% greater than in Trnava, this would still further open the gap per family in takings from livestock. This real estate capital — assumed to be yielding 12% [103] — would in itself have widened the gap between the two areas, and probably by more than we have shown, for it is likely that capital was used more productively in Belica district than in Trnava. A small offset, at the per capita level, however, is to be found in differences in family size, 4.66 in Trnava, 4.85 in Belica.

The foregoing analysis cannot disclose what the differences in female participation rates in the labour force really signify. Do they

[102] See above. pp. 29-31.
[103] Michael Palairet, "Fiscal Pressure and Peasant Impoverishment in Serbia before World War I," *Journal of Economic History*, XXXIX (1979) p. 730.

mean that women in Belica district worked twice as long on the land as those in Trnava, or was it the tasks they performed that led to their labour being relatively more valuable in comparison with that of men? It seems likely that female labour participation and livestock raising activity were in fact mutually associated, and that livestock raising enabled women's labour to be much more productively used than it would otherwise have been merely in contributing to agricultural tasks. A lot of the farm work of women went into the tending of livestock, particularly in a pig-raising area such as Belica, so the female labour participation rate was probably associated with the greater richness of that district in livestock.

Let us look more closely at livestock sales, since the livestock sector was evidently closely associated with relative prosperity, and not just simply through its direct contribution to cash income. As already noted, relative affluence in Podunavlje was strongly associated with the disposition of livestock-associated land, meadows and closes, and secondly, livestock tending seems to have provided a more efficient way of valorizing female labour than arable. In Belica, 66.2% of families, accounting for 79.5% of the population, obtained incomes from livestock, in Trnava 30.5% of families, accounting for 42.73% of the population. Note first of all that larger families tended to be more active in the livestock market than smaller ones since the average size of families in Belica which sold livestock was 5.83 and of those which did not, 2.94. In Trnava, families which sold livestock had 6.52 members, and those which did not had 3.83. Families with livestock for sale in Belica derived 177.7 dinars per family from these sales, but those in Trnava earned only 37.1 dinars. Altogether, livestock sales provided Belica peasants with 24.2 dinars per head, or 16.8% of their income; the corresponding figures for Trnava are 2.43 dinars and 3.0%.

As the average amount of direct taxation raised in Serbia in 1862/6 amounted to 7.35 dinars a head [104], and as this was raised

[104] The reason for selecting maize prices rather than the more heavily traded and exported wheat is that maize surpluses were destined in the 1890s to meet internal demand rather than exports. For example, in 1898, some 108,400 tonnes of wheat were marketed, but of these 48,900 were destined for internal consumption, whereas for

without differentiating between regions, we see that in Belica district, livestock sales were comfortably in excess of what was needed to meet the demands of the fisc, while in Trnava they fell woefully short of this figure. In Belica those families with livestock for sale earned on average enough to pay their taxes 4.1 times over, which left only 20.5% of the population needing to sell other, mostly cultivated, produce, whereas in Trnava, even though only 42.7% of the population enjoyed revenues from livestock, these on average could not have cleared more than 77% of their tax obligations through these sales. Like the majority of Trnava peasants who sold no livestock, most of those in Trnava who did hold livestock for sale would have needed to scrape together surplus grain for the market to keep themselves afloat financially. (There were few vineyards in Trnava.) So although in neither district did livestock sales amount to a high proportion of total income, livestock was of extreme importance in providing money. In that respect Belica district, and probably the more fertile northern regions in general, enjoyed a huge advantage over the poor south. It is also reasonable to assume that, as they disposed of higher incomes, the Belica peasants set aside much more meat for self consumption than those of Trnava.

If most peasants in fertile districts could easily meet their cash requirements by selling livestock, and most of those in relatively infertile ones could not, it follows (paradoxically) that more grain would be offered for sale by peasants in infertile districts than in the richer ones. As communications were costly, we may therefore infer that maize should have been more abundantly and therefore more cheaply available in the markets of poor upland districts than in the richer lowlands, and that, if there was any significant inter-regional trade in grain, the commercial flow would pass from upland to lowland, rather than in its "natural" direction from lowland to upland.

maize, a net import of 21,700 tonnes combined with 78,000 tonnes marketed domestically to satisfy 99,000 tonnes of internal demand. In other words, the price of maize in any locality should reflect locally available surpluses or deficits rather than the cost of transporting the commodity to the Danube ports.

In order to test whether this hypothesis is consistent with the facts, we have to identify which areas were intrinsically favourable for the production of grain surpluses, and which were not, under conditions in which extensive livestock raising did not compete for resources with the production of grain. This we can do by examining the productive map of Serbia in 1896-8. By then Serbian farming had become highly integrated with both internal and international markets. A vastly greater area of land had been turned over to arable and cereal farming had to a large extent displaced stockraising as the principal agticultural activity. We can then compare grain market patterns between the two periods.

In both periods good records were kept of grain prices in all the market towns which are listed as the first column in Table 10 below. Although it is impossible to say exactly from where these towns were supplied, we have assumed that supply conditions on their markets reflected the agricultural characteristics of the districts in which the towns were located. The immediate hinterland district of each town is shown in the second column, and in the third column its tendency in 1896-8 to grain surplus or deficit, calculated by taking the annual mean amount of grain produced there per capita, and subtracting from this the national average of per capita grain consumption, as an approximation to the amount of grain which the local peasants would withhold from the market. Zero surplus indicates that the mean amount of grain produced locally equalled the amount that was consumed per head of the Serbian population, that is to say Serbian production minus net exports (mean of 1896-8), which amounted to 290 kg per head. The surplus per head of any region in 1896-8 is taken as an indicator of the probable marginal capacity to expand grain production in 1863, when the country as a whole exported only 7,100 tonnes. This measure of the district potential to raise grain surpluses is set alongside the last two columns, which record firstly the local market price of maize in 1863, and secondly its mean price for 1897, 1901 and 1906 [105]. The districts are listed in Table 10 in rank order of their propensity to grain surplus.

[105] Ignjić, *Užice*, p. 75.

Table 10
Regional maize prices and grain surplus or deficit 1863 and end XIXth century

Town	district	grain surplus in 1896-8	maize price 1863	1897-1906
Požarevac	Požarevac	491	11.56	8.68
Smederevo	Smederevo	402	11.01	8.92
Jagodina	Belica	384	8.50	9.48
Svilajnac	Resava	332	11.64	8.90
Paraćin	Paraćin	305	8.83	9.53
Šabac	Mačva	225	10.33	9.01
v.Gradište	Ram	196	11.91	8.61
Kladovo	Ključ	177	8.73	8.31
Belgrade	Vračar	136	11.05	9.36
Aleksinac	Aleksinac	114	8.35	10.03
Negotin	Krajina	104	7.71	7.98
Zaječar	Zaječar	93	8.55	8.25
Kragujevac	Gruža	50	8.12	9.56
Knjaževac	Zaglavak	47	8.17	9.74
Valjevo	Valjevo	1	9.20	10.22
Loznica	Jadar	-7	9.06	9.55
g.Milanovac	Takovo	-10	6.93	11.08
Kruševac	Župa	-50	7.26	10.40
Užice	Užice	-88	6.10	12.29
Ivanjica	Moravica	-91	6.36	13.56
Kraljevo	Žica	-155	6.49	10.91

Prices are expressed in dinars per quintal, surpluses in 1900s in kg. per head.
Sources.
Surplus/deficit: Michael Palairet, "The Influence of Commerce on the Changing Structure of Serbia's Peasant Economy 1860-1912." (Unpublished Ph. D. thesis, University of Edinburgh, 1976) pp. 142-7, 221-31.
Maize prices:
1863: (in piastres, converted to dinars at 5:1) *Državopis Srbije,* II (Belgrade, 1865) p. 122.
1897, 1901, 1906 prices: *Statistika cena poljoprivrednih proizvoda u Kraljevine Srbije 1896-1900.* (Belgrade, 1902) p. 108, and *Statistički godišnjak Kr. Srbije,* 1901 pp. 272-3 and 1906, pp. 316-7.

The patterns for 1863 and the turn of the XXth century do in fact differ strikingly. In the later period, local surpluses and deficits in grain production correlate strongly and negatively with the local maize price. That is to say fertile districts raised grain surpluses which they passed on through trade to relatively infertile upland districts. But the pattern of maize prices in 1863 shows an equally strong *positive* correlation with what we know (with hindsight) to have been the local potential to expand grain production. Near the Danube ports, and in

fertile areas where grain should have been cheap to produce, maize was nevertheless dear; in areas far from the market, especially infertile uplands, maize was cheap. So it really does look as if we were correct in predicting that in 1863 it was the relatively poor districts, natural grain deficit areas, which raised the most substantial maize surpluses.

Let us look at the district of Užice, where maize prices were the lowest in the country, even though the terrain was most unsuited to cereal production. Stevan Ignjić ascribes the generally low level of prices in that region (livestock prices were also low) to reflect on the one hand a low local capacity to absorb food surpluses, and on the other, a tendency for producers to oversupply the market in order to earn enough money to pay their taxes[106]. This explanation is convincing. The tax system, which imposed a fixed capitation on all communes without regard to capacity to pay, would have had this effect — volume supplied would tend to be related inversely to the price the commodity commanded; in high price areas the complaint would be — and was — heard that the peasants were neglecting to supply the grain market, forcing town dwellers to import high-priced grain from abroad. Easy conditions for raising and selling livestock permitted them to behave this way. But in more remote upland areas, grain would be dumped on an ill-developed market which could scarcely absorb it. Consequently a good deal of economic effort was being devoted in the remote areas to produce — and overproduce — arable products under physical conditions which imposed high costs on producers.

Let us return to our comparison of Belica and Trnava districts. Maize was selling in Jagodina, the market town for Belica in 1863 at 8.50 dinars per quintal. We do not know its price in Čačak, the market town for Trnava, but at Kraljevo, the next nearest, it sold at 6.49. (Belica peasants were somewhat at a disadvantage in this respect to peasants in the districts which lay along the Danube and Sava,

[106] Aleks S Jovanović, "Zadruga po propisima našeg gradjanskog zakonika," *Glasnik Srpskog učenog društva*, XXXVI (Belgrade, 1872) pp. 244-5; Tomasevich, *Peasants*, pp. 185-7.

where prices were 11 dinars and upward.) If these prices are representative of those at which arable products traded in general, then the higher productivity of labour in Belica, as measured in money terms, after allowing for the difference in female labour force participation, was largely the result of the higher price its products realized on the market. For goods consumed on the farm the distinction is barely relevant. However, in both districts part of this produce must have heen sold and to this extent a low price was disadvantageous in the infertile uplands where grain sales were needed to cover tax payments, and where many exchange goods were probably dearer than in the north because of the greater distance from import competition.

After allowing for price differences, there was probably still a difference in the physical productivity of labour: in Belica district it seems to have been 18% higher than in Trnava, if differences in the price of maize reflect differences in the general price of farm outputs.

In summary the difference in income per head between Belica and Trnava districts arose because the standardized labour force in Belica was 31% higher than in Trnava as a percentage of the population (i.e. because much more use was made of female labour) because prices were also around 30% higher, because capital stock was 84.8% higher (per cap.) and because incomes from livestock sales amounted to 24.2 dinars against 2.4. Labour in Belica was also more productive than in Trnava. In Trnava, labour was unproductive because the land was unyielding and produce prices were low, not because families were short of land to cultivate; on the contrary, the holdings here were relatively large. Trnava peasants farmed 0.626 hectares per head, Belica peasants 0.597.

f) Economy and Family in the Serbian villages

So far we have examined the demographic and economic data disclosed by the 1863 census in mutual isolation. This is the safest approach, because of the lack of simple links between economic and demographic variables. But relationships may be discerned between

family structure and economic status and activity which are worth investigating because of the importance of the *zadruga* in Serbian family structure.

We can use Eugene Hammel's concept of "the *zadruga* as a process" as a building block for further study of the *zadruga* as a component in the development of the country's economic and settlement structure. Firstly, however, we note that although a common feature of Serbian rural life, the *zadruga* was associated with some regions much more than with others. In our four rural areas, *zadrugas* accounted for 44.7% of the population of Zaječar district, 34.5% of Belica, 29.5% of Podunavlje, and 21.6% of Trnava. Yet there is no correlation here between *zadruga* formation and level of economic welfare or advancement: Zaječar and Trnava were by a wide margin the two less developed, more isolated, areas of Serbia, yet they also represent the two extremes of *zadruga* formation. Nor was the *zadruga* associated particularly with Serb ethnicity, for in Zaječar district, with its exceptionally high *zadruga* presence, many of the names in the register are of Vlach and Bulgarian origin. The other three rural regions were of more or less pure Serb ethnicity.

The 1863 census data do however identify certain respects in which the *zadruga* differed from the simpler forms of family. In Table 11 below we assemble some economic indicators for Belica and Trnava districts tabulated according to the number of ever-married men in any family.

We remarked earlier that livestock-selling families in Belica and Trnava districts were nearly double the size of families which had no livestock sales. Table 11 shows that the sale of livestock both in Belica and Trnava — with their very different economic circumstances — was virtually universal among *zadrugas,* while only 31% of families with one married man sold livestock in Trnava, 72% in Belica. In both districts, families without adult married males seldom sold livestock, in 26% of cases in Belca, 15% in Trnava. Livestock and the *zadruga* were clearly associated, and we would be in step with the literature on the *zadruga* to suggest that livestock were the independent variable.

Table 11
Economic indicators and family structure in 1863

BELICA

Number of married males in family:							
0	1	2	3	4	5	6	7
cases:							
297	719	210	36	4	1	0	1
Percentage of families with livestock sales:							
25.6	72.2	96.2	100.0	100.0	100.0		100.0
Their family size:							
2.15	4.85	7.40	10.64	13.50	18.00		25.00
Their capital per head:							
263	190	204	228	297	44		2653
Their income per head:							
136	150	186	193	213	126		640

TRNAVA

Number of married males in family:				
0	1	2	3	4
cases				
437	823	123	18	3
Percentage of families with livestock sales:				
15.1	31.0	70.7	94.4	100.0
Their family size:				
2.77	4.94	8.02	12.44	16.67
Their capital per head:				
135	102	142	126	215
Their income per head:				
87	89	100	87	96

Beyond this we must be careful of conventional conclusions. Both livestock and the *zadruga* are supposed to be associated with the waning, patriarchal way of life, which the penetration of individualistic and capitalistic values is said to have undermined [107]. However, as Hammel remarks, an institution which has been claimed to be disappearing in the teeth of "modern" influences for 500 or so years clearly requires closer examination. *Zadrugas* were not dynastic affairs, but familial arrangements which were constantly forming and dissolving, and the decision of sons or brothers to raise their own

[107] E A Hammel, "The *Zadruga* as Process," in Lazlett, *Household and Family*, pp. 335-73.

families within the old family home, or to leave it, depended on current circumstances [108]. At least in the short run, prosperity would cement the familial bond, and distress would break it. And the obvious difficulty with the "patriarchal" versus "individuaistic" approach is that the *zadruga* was clearly much more flourishing in the comparatively commercialized, rich, accessible, lowland district of Belica than in the barely monetized, poor, remote highland area of Trnava. Indeed, according to Novakovic, "*Zadrugas* are strongest and most prosperous where the land is most fertile and agriculture most rational, as for example in the Šumadija and western Serbia" [109]. Of course, the key here is the fact that, at least in 1863, it was not the remote "stockraising" area, but the rich "arable" area which was the more heavily committed to livestock, as an object of commerce and (it is reasonable to assume) as a subsistence good. Whatever may have been the case in the distant past, stockraising was a lowland activity; the uplander was the arable farmer, out of necessity.

The "patriarchs" too, were the capitalist-minded group. Let us look at the relationship between the *zadruga,* and the capital stock per head of its members, as shown in Table 11. Among those families which were richest in terms of their capital stock per head, in both Belica and Trnava districts, were the families which lacked a married man. In income terms, however, these families were excessively dependent on what their fixed capital could earn for them, for they signally lacked labour.

Both in terms of capital and income, the nuclear family was relatively poor, and as we rise up the scale in terms of the number of married males so, both in Belica and in Trnava, the more real estate and income per head are present. The progression is imperfect at the higher end of the scale, partly because numbers become small, and also because these averages conceal a wide variation within the individual cells. Nevertheless we can confirm the often stated point that the splitting of a *zadruga* was a symptom of hard times for the

[108] Novakovitch, *La Zadrouga*. p. 156.
[109] Novakovitch, *La Zadrouga*. pp. 182-4; Tomasevich, *Peasants*, pp. 186-7.

family concerned, so conversely the willingness of heads of family to permit the formation of new filial families within their homes, or the willingness of brothers to continue farming and trading in partnership, was a symptom of well-being.

Conclusions

By analysing the 1863 Census of Serbia for the information it contains on households, occupations, age, sex, family structure, real estate holdings and income, we summarize the following principal findings.

1) The large surplus of males over females may reflect some female under-recording particularly in the towns, but in the main it reflects reality; it appears to have been caused by relatively high attrition among female children between the ages of 5 and 15. This was probably not caused by the neglect of female children relative to male children.

2) Women in the villages were married universally, and usually at 20-21. Nearly all men married as well, tending to be 2 years older than their wives at first marriage. Widows, up to the age of about 40, were usually remarried, normally to widowers, who were on average born before the (deceased) first husbands. So second marriages were short. Widowers seldom married young spinsters, and more usually married widows substantially younger than themselves. The urban marriage pattern did not differ greatly from the rural, though women at first marriage were slightly younger, and men deferred marriage for longer.

3) Because of these marriage patterns, fertility was little constrained by celibacy. Fertility was constrained by the spacing of births, not the early completion of families. The spacing of births may have been wider than in western Europe.

4) High infant mortality and mortality during childbearing years was restraining population growth, but because of this structure of mortality, even a slight future improvement in mortality could bring about the population explosion which was soon to occur.

5) On average the rural family had 5.12 members, the urban family, 3.84. 55% of the rural population lived in nuclear families, 73% of the urban population. 32% of villagers lived in *zadrugas*. In town and village alike the *zadruga* was specifically associated with farming as a primary occupation.

6) Serbia's net national income in 1863 at market price was 132 million dinars, or 117.5 dinars per head, where one dinar equalled one franc. Urban income per head was 182 dinars, rural 112.

7) The range of rural incomes between districts was about 8:1, but within rural districts, a Gini coefficient of income of 0.18 (average for four districts) testifies to a remarkable local equality, especially in the poorer districts.

8) Rural landlessness ranged from 0.6% to 2.7%, but peasant holdings were small, considering the abundance of uncultivated land. Mean holding size in four districts was 3.54 hectares, of which 54% was probably in arable. Most of the rest was water meadow or enclosed woodland pasture.

9) Property-holding patterns in Podunavlje district show that the larger the property, the more of it was held as meadow and close, the less as arable and vineyard. This was probably the case generally in Serbia, especially in the more prosperous districts.

10) Land prices were surprisingly high in 1863. Arable was relatively cheap, as the poorest peasants could obtain homestead rights, and the largest sought it only for subsistence needs, but vineyards were dear, because they provided a means for the small peasant with few pastoral resources to earn cash (as also did arable land). But meadows and closes were also dear, because they were keenly sought by relatively affluent peasant families to facilitate the raising and sale of livestock.

11) Because land prices were so high in 1863, there was little subsequent land price inflation, despite an enormous increase in the density of settlement by the early XXth century.

12) Rural districts with high income may have owed their relative prosperity to a high utilization of female labour (and vice versa) and to the disposal of significant quantities of livestock for sale. Affluence

depended closely on livestock raising, which probably created highly productive employment for women, and livestock raising was most active in those areas which were subsequently to become the main areas of arable farming. Upland areas, though unsuited to arable farming, were more dependent on it, at least for cash income, than fertile lowlands, for want of income from stockraising.

13) The local price level was also an important determinant of local income; and prices tended to be higher in rich lowland areas than in poorer upland districts. As peasants in the latter had to meet the same tax burden as those in the former, but without sufficient livestock sales to cover it, they tended to oversupply local grain markets, and (probably) to supply grain to the lowlands.

14) The *zadruga* was associated closely with relative affluence, and the sale of livestock. On the whole, the larger the number of married males in a family the better off its members, and the more livestock it disposed of for sale. Consequently the *zadruga* survived best where farming was most affluent and commercialized.

* * *

In the dominant rural sector, the above profile does not suggest an economic system in equilibrium. Livestock — more precisely pigs — which were the principal source of affluence, were declining in numbers because of the increasing difficulty of holding them within an extensive farming framework. Economic advance would only take place when larger peasants found it worthwhile to market crops. That would only happen if grain-market conditions became more favourable. At the time, grain (and wine) sales were more a symptom of distress and one which was probably worsening.