
Monumental Building as an Indicator of Economic Trends in Northern Rus' in the Late Kievan and Mongol Periods, 1138–1462

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IN RECENT YEARS, historians have employed quantitative methods to address problems of the socioeconomic, political, and cultural history of medieval Europe in new ways or with a sophistication heretofore impossible. Although evidence for many areas and for the period before the Black Death (1340s) is sketchy and difficult to interpret, we now have many socioeconomic profiles of towns and regions. Statistical methods have also enriched broader studies of demography, urban networks, and long-term economic trends.¹

The same cannot be said about our knowledge and understanding of economic trends in Kievan and Mongol Rus', and for good reason. The earliest documentary evidence capable of being analyzed statistically relates to the last third of the fifteenth century and mostly to Novgorod.² Historians, therefore, have relied heavily on narrative sources. As a result, their conclusions about economic trends in Kievan Rus', the economic impact of the Mongol invasion

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¹ On comparative demography and town formation, see J. C. Russell, *The Control of Late Ancient and Medieval Population* (Philadelphia, Pa., 1985); J. C. Russell, *Medieval Regions and Their Cities* (Bloomington, Ind., 1972); Ester Boserup, *Population and Technological Change* (Chicago, 1981); and works of Gilbert Rozman, particularly *Urban Networks in Russia, 1750–1800, and Premodern Periodization* (Princeton, N.J., 1976), 3–85. On agricultural trends, see Wilhelm Abel, *Agricultural Fluctuations in Europe* (New York, 1980); Georges Duby, *Rural Economy and Country Life in the Medieval West* (Columbia, S.C., 1968); M. M. Postan, *The Medieval Economy and Society: An Economic History of Britain, 1100–1500* (Berkeley, Calif., 1972), esp. 27–31, on pitfalls of interpreting pre-plague statistics; Norman Pounds, *An Economic History of Medieval Europe* (London, 1974); Harry A. Miskimin, *The Economy of Early Renaissance Europe, 1300–1460* (Englewood Cliffs, N.J., 1969); Peter Clark, ed., *Country Towns in Pre-Industrial England* (New York, 1981); and local studies in n. 5, below. M. T. Clanchy, *From Memory to Written Record: England, 1066–1307* (Cambridge, Mass., 1977); and Simon Franklin, "Literacy and Documentation in Early Medieval Russia," *Speculum*, 60 (1985): 1–38, are examples of statistical methods in studying medieval culture.

² Brilliantly worked by A. L. Shapiro, et al., *Agrarnaia istoriia severo-zapada Rossii, vtoraiia polovina XV–nachalo XVI v.* (Leningrad, 1971); and Shapiro, *Problemy sotsial'no-ekonomicheskoi istorii Rusi XIV–XVI vv.* (Leningrad, 1977). Richard Hellie, *Slavery in Russia, 1450–1725* (Chicago, 1982), begins where our period ends.

and tribute, causes and characteristics of economic recovery, regional trends, the distribution of wealth, and the relationship of economic change to politics and culture have been qualified, tentative, or tendentious.³ It is noteworthy that Charles Halperin's 1985 book and the 1982 study by V. T. Pashuto and others, one a Western and the other a Soviet overview of the period, while based on the most up-to-date literature, say little about economic matters. I would argue that a study of the records of monumental building, meaning masonry or brick construction, can provide a rough yardstick of economic trends, and that their information about patronage can illuminate relationships between economic life and matters of culture and politics.⁴ A digression concerning the economic and social history of preindustrial Europe and other civilizations can help us to understand how such a study might proceed.

Medievalists have commonly accepted that the construction of cathedrals, guild halls, and monasteries, and the building and extension of town walls, were evidence of a long-term expansion of the European economy from the tenth through the thirteenth centuries. Historians have also used construction and patronage records to compare the economic vitality of regions and the distribution of wealth among social classes. In the history of China, Japan, and other ancient civilizations, construction projects—including some of unparalleled magnitude—correlate well with periods of economic growth (but not always well-being), even if patterns of patronage and methods and economics of building varied greatly. Ancient Middle Easterners, Indo-Europeans, Mesoamer-

³ The list is impressive: S. B. Veselovskii, *Feodal'noe zemlevladienie v severo-vostochnoi Rusi* (Moscow, 1947); B. A. Rybakov, *Remeslo drevnei Rusi* (Moscow, 1948), 539–776; A. M. Sakharov, *Goroda severo-vostochnoi Rusi XIV–XV vekov* (Moscow, 1959); N. N. Voronin, *Zodchestvo severo-vostochnoi Rusi*, 2 vols. (Moscow, 1961–62); Jerome Blum, *Lord and Peasant in Russia from the Ninth to the Nineteenth Century* (Princeton, N.J., 1971), 13–23, 57–69, 117–34; Bertold Spuler, *Die Goldene Horde: Die Mongolen in Russland, 1223–1502* (Wiesbaden, 1965), 387–452; L. V. Cherepnin, *Obrazovanie russkogo tsentralizovannogo gosudarstva v XIV–XV vekakh* (Moscow, 1960), 149–452; V. V. Kargalov, *Feodal'naia Rus' i kochevniki* (Moscow, 1967), 190–217; Carsten Goehrke, *Die Wüstungen in der Moskauer Rus': Studien zur Siedlungs-, Bevölkerungs- und Sozialgeschichte* (Wiesbaden, 1968); Michel Roublev, "The Periodicity of the Mongol Tribute as Paid by the Russian Princes during the Fourteenth and Fifteenth Centuries," *Forschungen zur osteuropäischen Geschichte*, 15 (1970): 7–13; Michel Roublev, "Le tribut aux Mongoles d'après les Testaments et Accords des Princes russes," *Cahiers du monde russe et soviétique*, 7 (1966): 487–530; Janet Martin, "The Land of Darkness and the Golden Horde: The Fur Trade under the Mongols, XIII–XIV Centuries," *Cahiers du monde russe et soviétique*, 19 (1978): 401–21; Thomas S. Noonan, "Medieval Russia, the Mongols, and the West: Novgorod's Relations with the Baltic, 1100–1350," *Mediaeval Studies*, 37 (1975): 316–39; and Thomas S. Noonan, "Russia's Eastern Trade, 1150–1350: The Archeological Evidence," *Archivum Eurasiae Medii Aevi*, 3 (1983): 201–64; the studies by Lawrence N. Langer, "The Russian Medieval Town: From the Mongol Invasion to the End of the Fifteenth Century" (Ph.D. Dissertation, University of Chicago, 1972); "The Medieval Russian Town," *The City in Russian History*, ed. M. Hamm (Lexington, Ky., 1976), 11–33; "The Black Death in Russia: Its Effect upon Urban Labor," *Russian History*, 2 (1975): 53–67; and "Plague and the Russian Countryside: Monastic Estates in the Late Fourteenth and Fifteenth Centuries," *Canadian-American Slavic Studies*, 10 (1976): 351–68. On Novgorod, V. L. Iainin, *Novgorodskaja feodal'naia votchina* (Moscow, 1981); M. W. Thompson, *Novgorod the Great* (London, 1967); and B. A. Kolchin and V. L. Iainin, *Arkheologicheskoe izuchenie Novgoroda* (Moscow, 1979).

⁴ Charles J. Halperin, *Russia and the Golden Horde* (Bloomington, Ind., 1985), esp. 75–86; V. T. Pashuto, B. N. Floria, A. L. Khoroshkevich, *Drevnerusskoe nasledie i istoricheskie sud'by vostochnogo slavianstva* (Moscow, 1982). The Rus', of course, built prolifically with wood, which was near at hand and plentiful even in southern Rus' before the Mongol conquest. Ordinary people had the skills to work it quickly and cheaply. While the amount of building in wood might be taken as a guide to population, it need not correlate with economic trends. Even if it did, the ephemeral nature of wooden structures at most sites makes them useless as units of measure.

icans, and Incans, for instance, commonly built with stone; the Chinese, except in some fortifications, rarely built masonry walls (and used brick more for screening than for weightbearing walls); the Japanese built in wood.⁵

With the advent in the 1340s of the Black Death, the relationship between economic change and building in Europe was no longer obvious. Indeed, the coincidence of plague, economic ruin, and other woes alongside striking examples of economic vitality of certain regions, towns, and classes in the late fourteenth and fifteenth centuries has generated a variety of historical interpretations.⁶ The sharp contrasts that characterize European economic and social history in this period, however, may not be as damaging to this method of tracing economic trends as they might seem. In the studies of towns and regions of late medieval Europe, we find that, where there was prosperity, there was building. Conversely, bad times reduced the amount of building or caused it to be suspended entirely. Pipe and fabric rolls of building projects provide unambiguous evidence that economic instability was the primary reason why the construction time of Gothic cathedrals, punctuated as it often was with periods when nothing was built, extended over many generations. The cycles of construction, collapse, repair, and expansion of the Troyes Cathedral in the thirteenth century and after are a striking example of building mirroring economic trends. The episodic construction of town walls also continued to be a barometer of changing economic conditions. And, when we look at who built the magnificent town houses, palaces, and churches, not to mention the imposing fortifications of the age, we find records of families, groups, and regions that produced or controlled Europe's wealth. Finally, it should be noted that the coincidence of building with economic prosperity, and its abeyance in depressed

⁵ Miskimin, *Economy*, 21–22; Harry A. Miskimin and R. S. Lopez, "The Economic Depression of the Renaissance," *Economic History Review*, 2d ser., 14 (1962): 408–26, on the expansion of walls; Fritz Rörig, *The Medieval Town* (Berkeley, Calif., 1967), 139–40; Robert Gottfried, *Bury St. Edmunds and the Urban Crisis: 1290–1539* (Princeton, N.J., 1982), 14–45; Colin Platt, *The English Medieval Town* (London, 1976), 41–44, 59–60, 152–59, 171–74, mention monumental building as illustrative of economic growth in medieval Europe. See John K. Fairbank and Edwin O. Reischauer, *East Asia: The Great Tradition* (Boston, 1958), 48 and following; Joseph Needham, *Science and Civilization in China*, vol. 4, pt. 3 (Cambridge, 1971), 38–208; George B. Sansom, *Japan, A Short Cultural History*, rev. edn. (New York, 1962), 145–56, 186–92, 250–52, on China and Japan. On the Americas, see John Edwin Fagg's survey and bibliography, *Latin America*, 3d edn. (New York, 1977), 4–31, 808–09; on the Middle East and Mediterranean, Chester G. Starr, *A History of the Ancient World*, 2d edn. (New York, 1974), 31 and following; J. Boardman, J. Griffen, O. Murray, eds., *The Oxford History of the Classical World* (London, 1986), 283–86, 298–99, 496–502, 771–99; relevant chapters of John Fitchen, *Building Construction before Mechanization* (Cambridge, Mass., 1986).

⁶ Robert Gottfried, *The Black Death: Natural and Human Disaster in Medieval Europe* (New York, 1983); Gottfried, historiographical review in *Bury*, 8–13; Abel, *Agricultural Fluctuations*, 35–95; Joan Thirsk, "The Rural Economy," *Our Forgotten Past*, ed. Jerome Blum (London, 1982), 84–85; Miskimin, *Economy*, 25–170, on the fourteenth to fifteenth-century crisis. Gottfried, *Bury*, 35–95; David Herlihy, *Medieval and Renaissance Pistoia* (New Haven, Conn., 1967); David Herlihy, "The Distribution of Wealth in a Renaissance Community: Florence, 1427," and Charles Phythian-Adams, "Urban Decay in Late Medieval England," in *Towns and Societies: Essays in Economic History and Society*, eds. Philip Abrams and E. A. Wrigley (New York, 1978), 131–86; Philip Benedict, "Late Medieval and Early Modern Urban History," *Comparative Studies in History*, 28 (1986): 169–80; D. M. Nicholas, *Towns and Countryside in Fourteenth-Century Flanders* (Brugge, 1971); Lauro Martines, *Power and Imagination: City States in Renaissance Italy* (New York, 1979), 162–84; Richard Goldthwaite, *Private Wealth in Renaissance Florence* (Princeton, N.J., 1968); Richard Goldthwaite, *The Building of Renaissance Florence* (Baltimore, Md., 1980), 29–66, 318–50, are studies of local changes.

areas or bad times, correlates well with other indicators of general economic trends.⁷ Monumental building, therefore, ought to serve as a useful indicator of economic trends, whether by region or over time, in those cases for which ancillary evidence is lacking, as for Rus'. If matters of building materials, size, and other evidence bearing on costs, and information about patronage are also considered, it is possible to compare economic trends in different regions and to comment on their cultural and political significance.

Northern Rus', the lands of Novgorod (including Pskov), Suzdalia, and Riazan', was ruled by the Mongols directly or indirectly for two centuries after the invasion of 1237–1238 and became the core of the Muscovite Russian state (Figure 1).⁸ This study compares the amount of masonry and brick construction there with the total recorded throughout Rus' in the century before the invasion in order to measure the relative economic vitality of northern Rus' (Figure 2). It presents construction totals by period for northern Rus' from 1138 to 1462 (Figure 3) to examine economic effects of the conquest and the subsequent recovery, with factors such as building size included in order to make statistical results more meaningful. Estimates of cost will be useful in assessing Figure 4, which breaks down construction totals in northern Rus' by principality, 1238–1462. With this information, I shall compare economic changes and patronage patterns and comment on their relevance to political struggles in northern Rus' in which Moscow emerged triumphant.

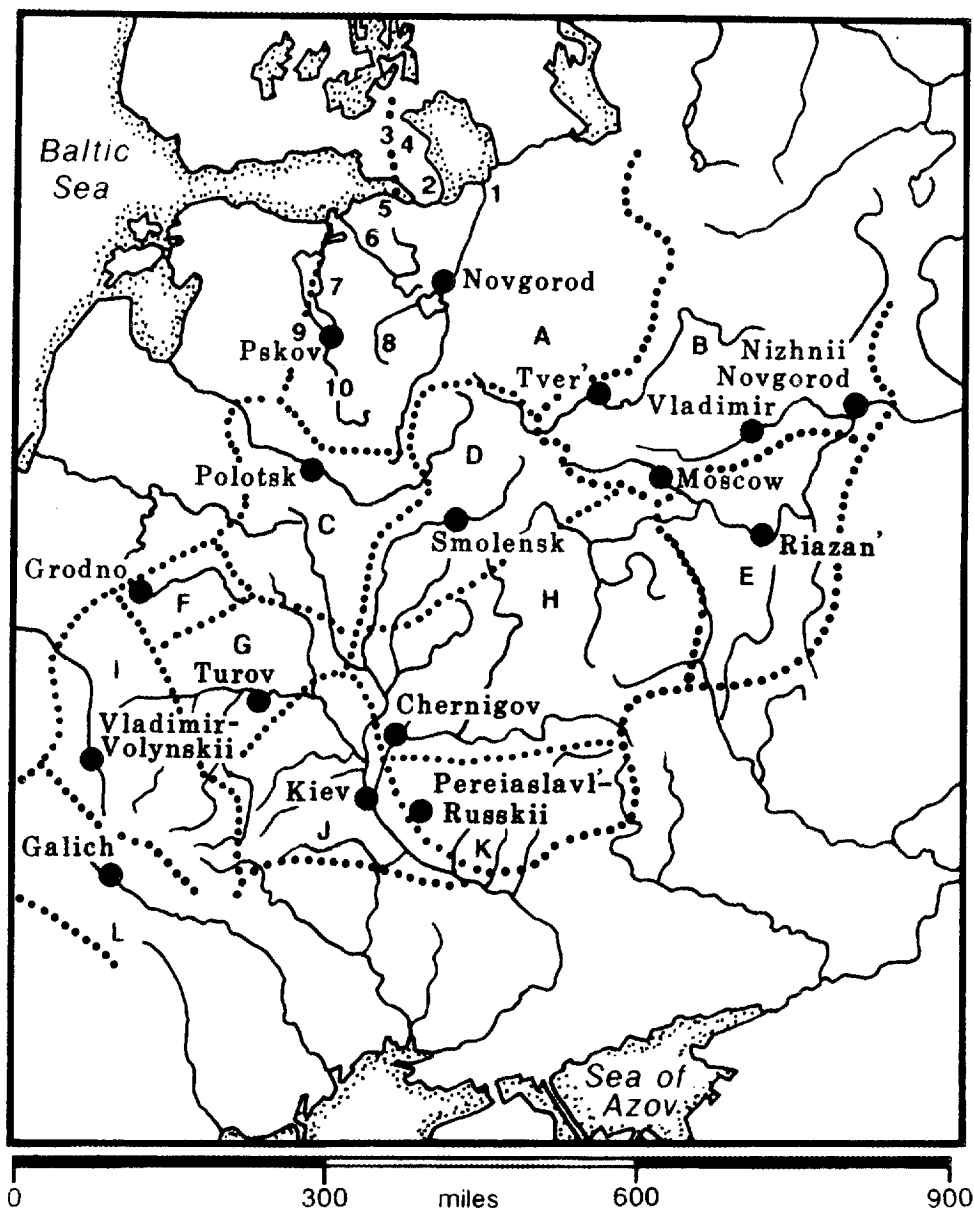
THE DATABASE RECORDS 483 CONSTRUCTION PROJECTS of stone or brick in Rus' as a whole during the period 1138–1237, and, in the north, 1238–1462. Each construction unit has equal weight for statistical purposes because 389 (or 81 percent) of the buildings are of the same sort: churches or chapels. Forts obviously were more costly to build, and their significance will be considered separately. Finally, the study counts the reconstruction of buildings and the extension of walls as independent records. Where a comparison of the size of structures is desirable, I provide the measure of foundations (in square meters); the heights are, of course, known only for the structures that survive. To the extent that it is possible, I shall also compare the size of forts.⁹ By combining this

⁷ Fitchen, *Building Construction*, 17, 49, makes the general connection between building and economics. See Goldthwaite, *Building*, 1–30, 67–112, 397–400, on Renaissance Italy; Gottfried, *Bury*, 14–45; and Platt, *English Medieval Town*, 171–74, 183–86, on economics and building in England; and Stephen Murray, *Building Troyes Cathedral* (Bloomington, Ind., 1987), 1–109.

⁸ I interpret "Rus'" broadly to encompass the totality of lands in pre-Mongol times said to have been the patrimony of the Riurikid dynasty. P. A. Rappoport, *Russkaia arkhitektura X–XIII vv. Katalog pamiatnikov*, AN SSSR, In-t. Arkheologii, *Arkheologiia SSSR. Svod arkheologicheskikh istochnikov*, no. E1–47 (Leningrad, 1982).

⁹ The database includes 377 churches, twelve chapels, three refectories, eighteen walls, nineteen forts, sixteen kremlins (or segments of), thirteen towers, eight palaces, five gates, one column, one baptistry, and five miscellaneous and five unidentified structures. Voronin, *Zodchestvo*, 2: 228–34, described masonry construction in northern Rus'; see below for my use of his estimate of labor and fabric needed to build the Moscow kremlin. We are better informed about construction materials, methods, and costs of building in other regions of Europe; Douglas Knoop and G. P. Jones, *The Mediaeval Mason*, 3d edn. (Manchester, 1967), 2–63; Louis Salzman, *Building in England down to 1540* (Oxford, 1967), 119–48; Goldthwaite, *Building*, 115–241.

Figure 1
THE LANDS OF RUS' ACCORDING TO P. A. RAPPAPORT



LANDS		FORTS	
A	Novgorod	1	Ladoga
B	Suzdalia	6	Iamgorod
C	Polotsk	2	Oreshek
D	Smolensk	7	Gdov
E	Riazan'	3	Korela
F	Chernaia Rus'	8	Porkhov
G	Turov	9	Izborsk
H	Chernigov	10	Ostrov
I	Volyn'		
J	Kiev		
K	Pereiaslavl'		
L	Galich		

information with data about building materials, quarry location, construction time, labor recruitment and wages, it is possible to make (even cruder) comparisons of construction costs. Patronage data exist for 57 percent of the construction records for northern Rus' from 1238 to 1462, and probable builders have been identified for an additional 14 percent. Although incomplete, the information greatly enhances historical knowledge of the distribution of wealth and, from this, our understanding of politics and the values that might have caused the powerful to invest in buildings of one sort over another, or in buildings over alternative investments.

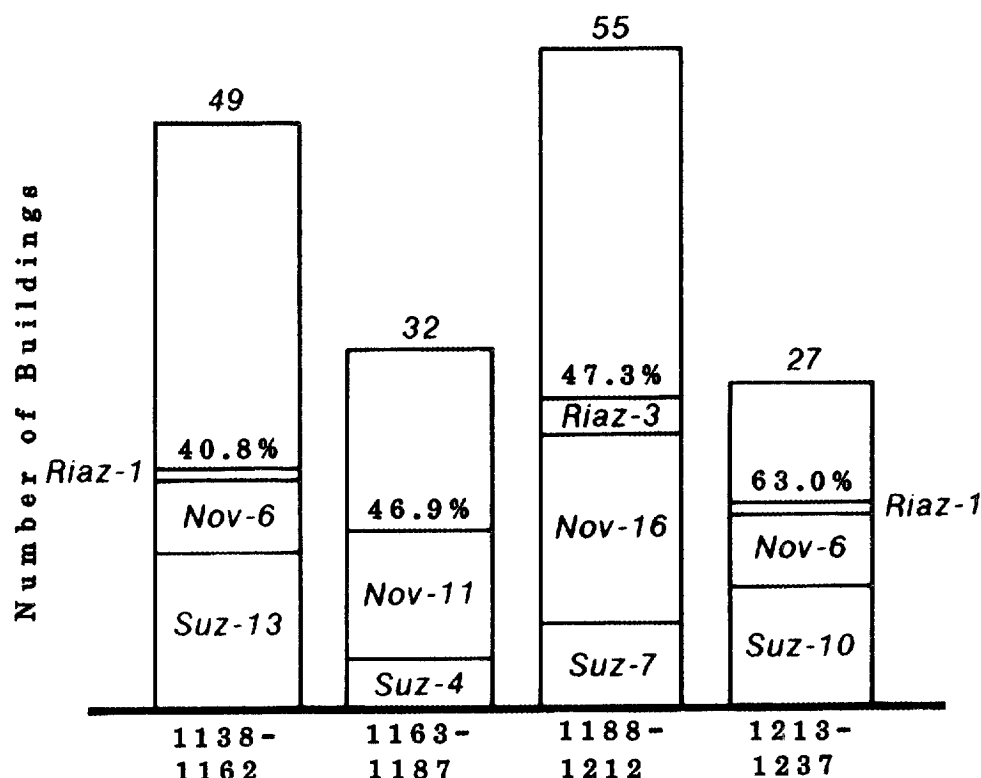
Because the starting date of a construction project appears in the sources more often (298 times) than the date of completion, I have used the beginning date as the reference point in making the graphs. In forty-five instances in which only the year a building was completed is available, this date is entered instead, the justification being that the time-span between beginning and completion was three years or less in 87 percent of the records for which we have both dates.¹⁰ If this relationship held true in most of the incomplete records, the method will not distort the calculations or their significance. Unfortunately, in the case of 140 other structures, only archaeological evidence survives. Although the majority of these have been dated to middle of the x century, or to the end of x century and beginning of $x + 1$ century, I have entered the "date begun" as a specific year, it being the mean date for the estimated period in which the structure was built.¹¹ The study minimizes distortions that might arise from this method by the manner in which it groups records into time periods. The starting point is to make 1237/1238 a dividing line so as to focus on the impact of the Mongol invasion on northern Rus'. From this divide, I have worked backward and forward, grouping construction by twenty-five-year periods. This allows me to measure short-run changes but also to validate in part an estimate such as "mid-twelfth century" by placing it in the middle of one of the quarter-century periods. It is also fortuitous, but appropriate, that by this method the investigation ends in 1462, the year in which Ivan III inherited a united Grand Principality of Moscow and Vladimir, one to which Novgorod owed vassalage and over which the Mongols no longer held power.

BUILDING RECORDS provide new information about economic trends in late pre-Mongol Rus'. Allowing for the distortion in Figure 2 resulting from the clustering of estimated records under 1150 and 1200, it is apparent that

¹⁰ Two-thirds were begun and finished in the same year; another 13 percent were completed in the following year, and 8 percent more within two years.

¹¹ Salzman, *Building*, vi, maintained that, with adequate evidence, structures can be dated with a margin of error of twenty years. The method of recording estimates tends to cluster dates under 1150, 1200, and other "round numbered years." This distortion has little effect and shows up only in Figure 1 and to a lesser extent in the first part of Figure 2. This is because well over two-thirds of dates estimated exclusively from archaeological evidence relate to building throughout Rus' before 1238; also, only fifty-five such dates during the period 1138–1462 pertain to structures in northern Rus', and they tend not to cluster.

Figure 2
MONUMENTAL BUILDING IN NOVGOROD, SUZDALIA, AND RIAZAN'
COMPARED TO TOTAL BUILDING IN RUS', 1138-1237
BY 25 YEAR PERIODS



southern Rus' experienced a steady rate of construction in the century before the Mongol invasion. This trend is in line with recent studies indicating that Kiev remained the largest city in Eastern Europe north of the Danube, that Galich and possibly Chernigov were growing towns, and that town formation in Volyn' appears to have been vigorous, bringing into question the traditional view that southern Rus' was in economic decline, whether as a result of princely warfare, nomadic incursions, or a trade slump.¹² Building records for western lands of

¹² The database records seventeen masonry and brick projects in Kiev, three in Pereiaslav'-Russkii, eight in Chernigov, and fourteen in Galich-Volyn', 1138-1237. Because towns other than Kiev in Ukraine have not been investigated thoroughly, the database may understate totals for southern Rus'. Pereiaslav'-Russkii was the exception. By 1187, it was a dependency (and one of the least important, judging by inheritance patterns) of the ruling house in Suzdalia, John Fennell, *The Crisis of Medieval Russia, 1200-1304* (London, 1983), 10-11. Because of this and perhaps Polovetsian raids, no buildings are known to have been built there after the 1150s. P. P. Tolochko, *Kiev i Kievskaiia zemlia v epokhu feodal'noi razdroblennosti XII-XIII vekov* (Kiev, 1980); V. I. Mezentshev, "Pro formuvann-

Chernaia Rus', Turov, and Polotsk suggest prosperity until about 1190, after which construction almost ceased. Smolensk built as many buildings as Galich-Volyn' and Polotsk combined, although construction seems also to have dropped precipitously in the thirteenth century.¹³ The strong upward curve of construction in Novgorod is in line with other evidence of growing prosperity. However, as was true for other western lands, building may have slackened in the final quarter-century, quite likely the result of a shared experience of economically exhaustive warfare with Lithuanian tribes and various German crusading orders. The pattern for Suzdalia and Riazan' was relatively stable and strong throughout. It is important as well to realize that emerging towns in the mid-twelfth century built big churches, all but one being episcopal sees, that were comparable to the cathedrals built in Kiev, Novgorod, and elsewhere about a century earlier. Prince Andrei Bogoliubskii no doubt consciously built the central cupola of the Church of the Dormition in Vladimir to be higher (32.3 meters) than that of St. Sophia in Kiev (28.3 meters).¹⁴

Finally, Figure 2 shows that building in the northern lands of Novgorod, Suzdalia, and Riazan' increased not only over time but also as a percentage of total building in Rus'. The increase was significant, from 41 percent during 1138–1162 to 63 percent during 1213–1237. Furthermore, the proportion of construction in northern Rus' rose consistently through each of the quarter-century time periods. From this information, it appears likely that northern Rus' was growing in wealth and possibly in population more rapidly than Rus' as a whole before the Mongol invasion.

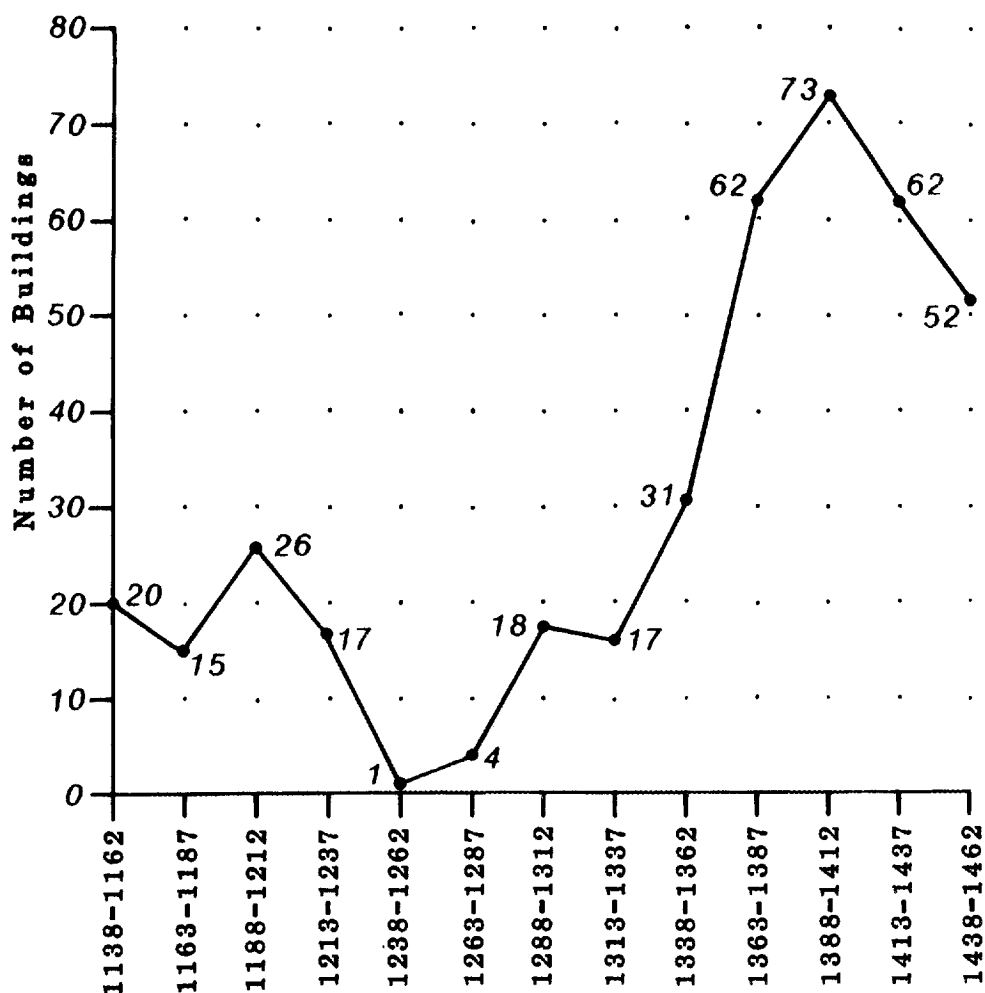
FIGURE 3 ILLUSTRATES THE SEVERITY AND THE TENACITY of the depression in monumental construction that followed the Mongol invasion. Northern Rus' had enjoyed an ascending rate of growth in building in the century before the invasion. As many as twenty-six monumental buildings were built in northern

nia mis'koi terytorii davn'oho Chernihova," *Arkheolohiia*, 34 (1980): 53–64; V. I. Mezentsev, "The Territorial and Demographic Development of Medieval Kiev and Other Major Cities of Rus': A Comparative Analysis Based on Recent Archeological Research," forthcoming in *The Russian Review*; Thomas Noonan, "The Transformation of Kiev into a Major European Commercial and Industrial Center during the Pre-Mongol Era," unpublished paper read at the Meeting of the American Association for the Advancement of Slavic Studies, New Orleans (November 1986); David B. Miller, "The Kievan Principality in the Century before the Mongol Invasion: An Inquiry into Recent Research and Interpretation," *Harvard Ukrainian Studies*, 10 (1986): 215–40, argue that southern Rus' remained prosperous to 1240.

¹³ For the four quarters before 1238, the totals for Chernaia Rus' are 5, 3, 0, 0 respectively; for Polotsk: 5, 4, 1, 0; for Smolensk 7, 3, 11, 3.

¹⁴ Compare foundation sizes of the Church of the Dormition in Galich (ca. 1150): 1,215 sq. meters; that in Vladimir-Volyn'skii (1156–60): 715 sq. meters; that in Rostov (1161–62, reconstructed 1213–31): 954 sq. meters; that in Vladimir in Suzdalia (1185–89): 1,183 sq. meters; the Church of Sts. Boris and Gleb in Riazan' (1194): 632 sq. meters, with St. Sofia, Polotsk (ca. 1050): 832 sq. meters; St. Sofia, Kiev (ca. 1050): 2,299 sq. meters with galleries; St. Sofia, Novgorod (1046–50), with galleries: 1,348 sq. meters; Church of Our Savior, Chernigov (ca. 1050): 734 sq. meters; Church of St. Michael the Archangel, Pereiaslavl'-Russkii (completed 1089; rebuilt twice before 1238): over 845 sq. meters; Rappoport, *Russkaia arkhitektura*, nos. 10, 44, 55, 70, 74, 91, 97, 161, 183, 187; Voronin, *Zodchestvo*, 1: 189, 316.

Figure 3
MONUMENTAL BUILDING IN NORTHERN RUS', 1138-1462
BY 25 YEAR PERIODS



Rus' in a single quarter-century (1188-1212); in no quarter-century were there fewer than fifteen (1163-1187). Measured against this level, the fifty years after the conquest were nothing less than a calamity. In the first quarter-century after 1237, Bishop Kirill of Rostov restored the small Church of Sts. Boris and Gleb in Kideksha near Vladimir, the only work done in stone or brick.¹⁵ Novgorod,

¹⁵ *Polnoe sobranie russkikh letopisei* [hereafter, *PSRL*] (St. Petersburg-Petrograd-Leningrad-Moscow, 1846-, and 2d edn.; St. Petersburg-Leningrad, 1908), 1: 469; Rappoport, *Russkaia arkhitektura*, no.

although it had entirely escaped destruction, built nothing. For the next twenty-five-year interval, 1263–1287, there are records of only four projects, two in Novgorod and two in Suzdalia, of which one was a reconstruction. For the next fifty years, 1288–1337, the pace of construction quickened, and there is evidence of thirty new or rebuilt structures. Yet the total is well below that for the fifty years before the invasion.

If Novgorod and Suzdalia experienced a century-long economic depression, the Riazan' land must have become a primitive frontier. Although the fourteenth-century "Tale of the Destruction of Riazan'" told of princes building churches and monasteries after the sack of 1237, in fact, Riazan' became a ghost town. In the fourteenth century, its princes reestablished themselves fifty kilometers to the west in Pereiaslavl'-Riazanskii. It has been suggested without much proof that the Church of the Dormition in the Riazan' kremlin and a gate tower there might have been built of stone sometime after 1390, but neither structure has been studied carefully. Excepting these, there is no evidence of masonry or brick building in the Riazan' land prior to 1462.¹⁶

Construction records do not explain why northern Rus' remained stagnant; they only suggest that Mongol tribute, levies of labor, punitive expeditions, and other impositions, following on the destruction of the initial invasion, siphoned off resources and skilled workers on a grand scale. Although the specific burden of these hardships cannot be known from surviving evidence, the sorry record of monumental building should cause historians to reject interpretations that would minimize the economic consequences of the conquest.¹⁷

The earliest signs of economic recovery were construction of a major fort (Kopor'e, 1280) and a masonry church in Novgorod (St. Nicholas, 1292), and the resumption of monumental building in Suzdalia (Church of the Transfiguration, Tver', 1285–1290).¹⁸ Although building, especially of costly forts, could

85; Voronin, *Zodchestvo*, 2: 129–34; N. S. Borisov, "Russkaia arkhitektura i mongolo-tatarskoe igo (1238–1300)," *Vestnik Moskovskogo universiteta*, series 9: *Istoriia* (1976), no. 6, 63–79; Rybakov, *Remeslo*, 665–75.

¹⁶ N. V. Ponyrko, ed., *Voinskie povesti drevnei Rusi* (Leningrad, 1985), 105; A. L. Mongait, *Staraia Riazan': Materialy i issledovaniia po arkhologii SSSR* [hereafter, *MIA*], 49 (Moscow, 1955), 27–28. A seventeenth-century source described Pereiaslavl'-Riazanskii's kremlin as having a gate tower of stone and brick from which V. V. Kostochkin, "Voenno-oboronitel'nye sooruzheniia," *Ocherki russkoi kul'tury XIII–XV vekov*, 2 vols., A. V. Artsikhovskii, et al., eds. (Moscow, 1969), 1: 448, tentatively dated the kremlin to the second half of the fourteenth century. It is unlikely that brick would have been used then, and Kostochkin offered no further evidence of when the kremlin was built or whether the gate tower was an original part of it. G. K. Vagner, *Riazan'* (Moscow, 1971), 16; and E. V. Mikhailovskii, *Riazan'. Pamiatniki arkhitektury i iskusstva* (Moscow, 1985), 24–26, dated the original Church of the Dormition between about 1390 and 1427. Fennell's optimistic view of the economic health of Riazan' before 1300, *Crisis*, 88, seems overstated.

¹⁷ Northern Rus' also had to summon resources to oppose military threats to Novgorod from the Teutonic Order and Sweden; Eric Christiansen, *The Northern Crusades* (Minneapolis, Minn., 1980), 105–31; I. P. Shaskol'skii, *Bor'ba Rusi protiv krestonosnoi agressii na beregakh Baltiki v XII–XIII vv.* (Leningrad, 1978), 122–233. While the Mongols excluded the Rus' from Volga-steppe commerce, Novgorod merchants obtained safe passage across Suzdalia to the east in 1270; *Gramoty Velikogo Novgoroda i Pskov*, ed. S. N. Valk (Moscow, 1949), no. 3, 12–13; Noonan, "Russia's Eastern Trade," 213 and following; Langer, "The Medieval Russian Town," 16–17; Martin, "Land of Darkness," 405–07, 409–16.

¹⁸ *Novgorodskaiia pervaiia letopis'* [hereafter, *NPL*], ed. A. N. Nasonov (Moscow, 1950), 323, 327; *Troitskaia letopis': Rekonstruktsiia teksta* [hereafter, *TL*], ed. M. D. Priselkov (Moscow, 1950), 343–45.

only indirectly be said to promote economic growth or well-being, it was impressive testimony that northern Rus' again had begun to generate wealth. At first, regular building only took place in the Novgorod land. But, by the 1320s, a concerted record of building appears in Suzdalia as well. The boom continued for eighty years and included major projects requiring large investments of human resources and wealth. In 1302, work commenced in Novgorod on a *detinets* (kremlin) of stone and brick. Beginning in 1335, the "Trade Side" across the river was partially fortified with a stone wall, and soon stone towers appeared on Novgorod's outer walls of earth and wood. In 1309, a wall was built to protect Pskov's commercial and residential section (*posad*) and was extended many times. In 1337, Pskov began to wall its kremlin with stone.¹⁹ Novgorod and Pskov also built and continually strengthened a string of forts along the western frontier. The early forts at Izborsk, west of Pskov (1303), and Oreshek on Lake Ladoga at the source of the Neva River (1323), at first little more than stone keeps, soon became substantial walled forts with towers (1330; 1352 and 1410). By the 1400s, Pskov and Novgorod had six more forts: Kopor'e in Izhora (rebuilt in 1297, expanded in 1365), Tiverskii gorodok and Korela (Keksholm) in Karelia (approximately 1338, 1364), Iamgorod on the Luga River (1384), Ostrov on the Velikaia River (approximately 1350; rebuilt approximately 1386), and Porkhov on the Shelon (1387).²⁰ In Suzdalia, Grand Prince Dmitrii Donskoi built a stone kremlin in Moscow in 1367–1368, and in 1365 Prince Boris Konstantinovich began work on a stone kremlin in Nizhnii Novgorod. Work resumed in 1372, but

¹⁹ *NPL*, 331, 343, 345–46, 372, 385, 396; *PSRL*, 4, pt. 1: 370, 390; 15, pt. 1 (2d edn.): 72; 16: 90; *Pskovskie letopisi*, 2 vols., ed. A. N. Nasonov (Moscow, 1941–55) 1: 14, 17, 23–26; 2: 22, 24, 28–31, 92, 106–08. On Novgorod: M. Kh. Aleshkovskii, L. E. Krasnorech'ev, "O datirovke vala i rva Novgorodskogo ostroga," *Sovetskaia Arkheologiia* (1970), no. 4, 54–73; and "K datirovke vala i rva Novgorodskogo ostroga. Otvet S. N. Orlovu," *Sovetskaia Arkheologiia* (1972), no. 3, 392–95; M. Kh. Aleshkovskii, "Novgorodskii detinets 1044–1430 gg.," *Arkhiturnoe nasledstvo*, 14 (1962): 1–26; Henrik Birnbaum, *Lord Novgorod the Great* (Columbus, Ohio, 1981), 59–60; V. L. Iainin, "O prodolzhenii stroitel'stva Novgorodskogo kremlia XV v.," *Sovetskaia Arkheologiia* (1978), no. 1, 259–60; M. K. Karger, *Novgorod velikii* (4th edn.; Moscow, 1980), 100–02; and A. L. Mongait, "Oboronitel'nye sooruzheniia Novgoroda Velikogo," *MIA*, 31 (1952): 7–132, arguing that the kremlin had stone walls before 1237. For Pskov: M. Kh. Aleshkovskii, "Nachal'nye etapy kamennogo stroitel'stva Pskovskogo kroma," *Drevnerusskoe iskusstvo. Khudozhestvennaia kul'tura domongol'skoi Rusi* (Moscow, 1972), 322–48; P. A. Rappoport, "Persi Pskovskogo kroma," *Kratkie soobshcheniia In-ta istorii material'noi kul'tury AN SSSR*, 62 (1956): 56–58; I. K. Labutina, *Istoricheskaia topografiia Pskova v XIV–XV vv.* (Moscow, 1985), 31–61. I. K. Labutina, "Letopisnye dannye XIV v. o krepostnykh sooruzheniiakh Pskova," *Sovetskaia Arkheologiia* (1970), no. 2, 93–108; V. D. Beletskii, "Arkheologicheskie dannye k datirovke krepostnykh sten Dovmotova goroda," *Arkheologicheskii sbornik Gos-ogo Ermitazha*, 12 (1970): 68–80, argued that Pskov had stone walls before 1300.

²⁰ *NPL*, 100, 328, 339, 379, 381, 475–77; *Pskovskie letopisi*, 1: 14, 17 and 2: 92; *PSRL*, 4, pt. 1: 288, 410; 5: 202; 16: 57, 90, 132, 159; M. N. Tikhomirov, "Spisok russkikh gorodov dal'nikh i blizhnikh," in his *Russkoe letopisanie* (Moscow, 1979), 130; A. N. Kirpichnikov, *Kamennye kreposti novgorodskoi zemli* (Leningrad, 1984); P. A. Rappoport, "Iz istorii voennoinzhenernogo iskusstva drevnei Rusi (Staraia Ladoga, Porkhov, Izborsk, Ostrov)," *MIA*, 31 (1952): 133–201; P. A. Rappoport and V. V. Kostochkin, "K voprosu o periodizatsii istorii drevnerusskogo voennogo zodchestva," *Kratkie soobshcheniia In-ta istorii material'noi kul'tury AN SSSR*, 59 (1955): 25–27; V. V. Kostochkin, "Kreml' drevnego Gdova," and "K kharakteristike pamiatnikov voennogo zodchestva Moskovskoi Rusi kontsa XV–nachala XVI vekov," *MIA*, 77 (1958): 96–97, 120, 122–25, 134–35; V. V. Kostochkin, "O datirovke krepostei Ostrova i Izborska," *Kratkie soobshcheniia In-ta istorii material'noi kul'tury AN SSSR*, 62 (1956): 59–65; V. V. Kostochkin, "Stroitel'naia biografiia krepostai Izborska," *Sovetskaia Arkheologiia* (1959), no. 1, 124–43; V. V. Kostochkin, "Voенно-оборонител'nye," 416–30; and A. R. Artem'ev, "Stratigrafiia i khronologiia izborskoii kreposti," *Sovetskaia Arkheologiia* (1985), no. 2, 130–40.

it was never finished.²¹ Nevertheless, the increasing tempo and scale of construction in northern Rus' suggests that there was substance to the perception of the Muscovite chronicler who, in the entry for 1328, wrote that, when Ivan Kalita of Moscow became Grand Prince, he inaugurated "a long peace of forty years, [in which] pagans ceased to war on the Russian land and [ceased] to slaughter Christians . . . , and thenceforth a great peace reigned throughout the land."²²

In preindustrial societies, natural and political calamities could alter economic trends dramatically. It is therefore remarkable that various afflictions lamented by chroniclers after 1300, the most serious of which were repeated epidemics of plague, had no measurably adverse effect on the building boom. Plague visited Novgorod and Pskov in 1352–1353, struck again in 1360, and spread to Suzdalia. Thereafter it became endemic, as was the case throughout Europe, reappearing each decade until 1448.²³ Descriptions of chroniclers suggest that it also had the same ghastly effects on Russian towns as on those further west, killing with frightful efficiency. While plague must have depressed economic growth, one can do little more than speculate about why it did not cause a decline in monumental building in the fourteenth century as it did in Western and Central Europe. Even when the number of structures built each quarter-century in northern Rus' began to drop after 1412, it is difficult to connect the slump to economic woes brought on by plague. Novgorod, for example, in the period 1413–1437, recorded its highest total of projects, including several large ones. To explain this anomaly, historians have suggested that chroniclers exaggerated, that plague was less devastating in northern Rus'. It may be that a decline in building does not show up because the upswing in construction had begun from so low a level that retarding effects of plague still left northern Rus' with a net gain. It could also be argued that high death rates concentrated wealth in fewer hands or that the dying left their wealth to the church, in either case making construction more possible. Research for this article and analogy from European

²¹ *TL*, 384, 394; *PSRL*, 15, pt. 1 (2d edn.): 74, 100; 23: 114; *Nizhegorodskii letopisets*, ed. A. S. Gatsiskii (Nizhnii Novgorod, 1886), 12–17; Voronin, *Zodchestva*, 2: 175–79, 213–14; N. N. Voronin, "Moskovskii kreml' (1156–1367 gg.)," *MIA*, 77: 52–66; I. V. Trofimov and I. A. Kir'ianov, "Materialy k issledovaniiu Nizhegorodskogo kremlia," *MIA*, 31: 318–46. Aleshkovskii, "Nachal'nye etapy," 347, questioned whether Dmitrii's kremlin was entirely of stone, noting the short time of construction, the likelihood that construction of kremlins usually proceeded in stages, and because Ambrogio Contarini, who visited Moscow in 1476–77, said it was of wood. Also Joel Raba, *The Moscow Kremlin: Mirror of the Newborn Muscovite State* = The Russian and East European Research Center, Tel Aviv University, *Slavic and Soviet Series*, 2 (1975): 6–7; and *Barbaro i kontarini o Rossii*, ed. E. Ch. Shrzhinskaia (Leningrad, 1971), 203–04. I am unaware of evidence of a Mongol prohibition against fortifications, although a century earlier (1259) in southern Rus' the Mongol commander Burundai compelled Princes Danilo and Vasilko Romanovich of Galich and Volyn' to dismantle the walls of their towns, *PSRL*, 2: 848–52; *The Galician-Volynian Chronicle*, trans. and ed. George A. Perfecky (Munich, 1973), 78–79.

²² *TL*, 359. In fact, Ivan became Grand Prince in 1331; John Fennell, *The Emergence of Moscow, 1304–1359* (Berkeley, Calif., 1968), esp. 111–19, 190–95.

²³ *NPL*, 362–63, 367, 408; *Pskovskie letopisi*, 1: 21–23; *TL*, 379–81, 430, 438; *PSRL* 4, pt. 1: 306; 25: 212, 231, 237, 243, 244, 246–47, 270; 30: 113, 128, 131; 15, pt. 1 (2d edn.), 70, 76–77, 106; Gottfried, *Black Death*; John T. Alexander, *Bubonic Plague in Early Modern Russia* (Baltimore, Md., 1980), 11–16.

experience also suggest that survivors in Novgorod built stone churches as memorials to those struck down by plague.²⁴

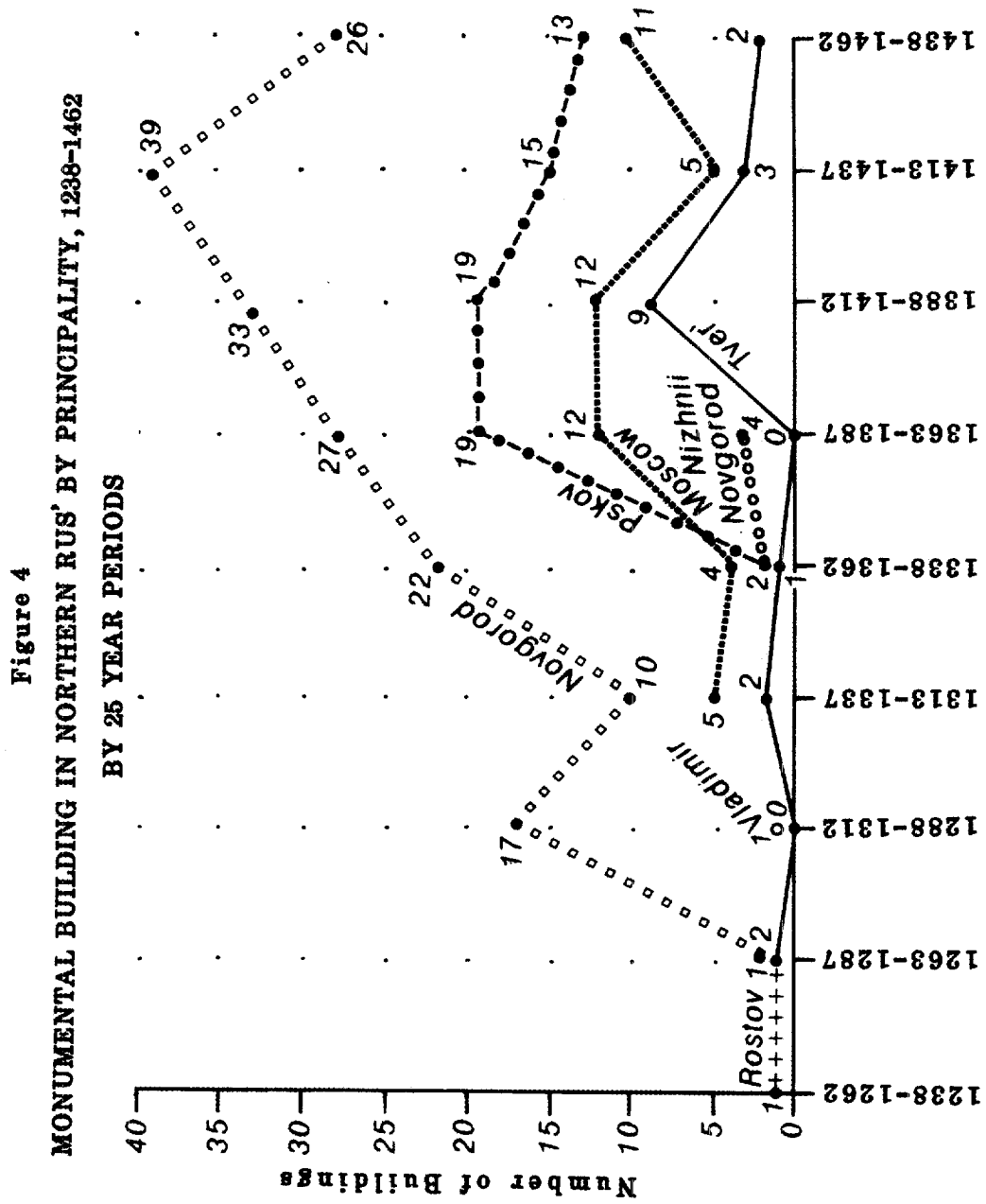
The overall increase in the number of construction projects each quarter-century to 1412 indicates that continuous fighting with Lithuanian and Tatar armies from the 1370s, including Khan Tokhtamysh's sack of Moscow and devastation of Suzdalia and Riazan' in 1382 and the burdens that followed, was considerably less destructive to the economy of northern Rus' than the original conquest.²⁵ This does not mean that individual principalities in Suzdalia did not suffer economically. Tver', for instance, was unable to afford to build at all between 1353 and 1394, as (losing) wars devastated its economy numerous times. The principality must have recovered rapidly, however, because, in little over a decade, 1394–1407, the people of Tver' erected nine churches. Figure 4 shows that military disaster (discussed below) also abruptly terminated Nizhnii Novgorod's ability to build after the 1370s. Moscow, on the other hand, seems to have survived the sack of 1382 and resumed payment of a heavy tribute to the Tatars fairly well. Between 1363 and 1462, between four and ten stone structures were built in Moscow each quarter-century. In this context, the unusually long period, from 1378 to 1404, required for the Simonov Monastery to build its Church of the Dormition, despite having the grand prince and metropolitan among its patrons, was very likely caused more by changing building priorities in an inelastic economy than by a downturn. In his study of monumental building, N. N. Voronin speculated that Dmitrii Donskoi diverted resources to build walled monasteries with stone churches in Serpukhov and Kolomna as defense points on the Oka River in the late 1370s. Similarities in structural detail suggest that Moscow builders also erected two churches in Mozhaïsk and one in Zvenigorod in the 1390s.²⁶

Although monumental construction in northern Rus' proceeded vigorously from 1412 to 1462, three or four times the rate of the early fourteenth century, it nevertheless declined. At first glance, this fact seems to support Carsten

²⁴ Alexander, *Bubonic Plague*, 11–16; Langer, "Plague," 351–68. Goehrke, *Die Wüstungen*, 65–66, suggested that plague severely damaged the economy; on effects of plague on culture and building, see Goehrke, 32; and Russell Zguta, "The One-Day Votive Church," *Slavic Review*, 40 (1981): 423–32.

²⁵ *TL*, 390–428; *PSRL*, 4, pt. 1: 297–38, 406–07; 15: 430–42, 482–84; 25: 185–91, 193–96, 199–210, 238–39; 15, pt. 1 (2d edn.): 94–100, 103–07, 110–21, 133–35, 139–46, 148–49, 177–85. M. A. Salmina, "Povest' o nashestvii Tokhtamysha," *Trudy otdela drevnerusskoi literatury*, 34 (1979): 134–51; A. E. Presniakov, *The Formation of the Great Russian State* (Chicago, 1970), 248–52, 265–88; Cherepnin, *Obrazovanie*, 568–663.

²⁶ On construction in Moscow: *TL*, 381, 384, 406, 443–44; *PSRL*, 2 (2d edn.): 539; 5: 256, 274; 6: 130, 235–39; 8: 28, 149, 152, 244; 12: 75, 112–13, 158, 198, 232; 15, pt. 1 (2d edn.): 84; 18: 143, 151, 205; 22, pt. 1: 510; 23: 113–14, 133, 144, 154, 157; 25: 233, 271, 275–77; 30: 125; Voronin, *Zodchestvo*, 2: 184–86, 242–66, 326–37; L. I. Ivina, *Krupnaia votchina severo-vostochnoi Rusi* (Leningrad, 1979), 36–38, 75; Veselovskii, *Issledovaniia po istorii klassa sluzhilykh zemlevladel'tsev* (Moscow, 1969), 443–44. In Tver': Voronin, *Zodchestvo*, 2: 375–412, 425; *TL*, 449, 499; *PSRL*, 6: 132; 11: 156, 202; 15: 470, 488, 490–91, 494–95; 15, pt. 1 (2d edn.): 164–66, 186, 25: 233; Langer, "Russian Medieval Town," 88–93. In the Muscovite centers of Dmitrov, Mozhaïsk, Zvenigorod, Kolomna, Serpukhov, and the Trinity-St. Sergei Monastery: *TL*, 396–97, 419, 440; *PSRL*, 8: 31; 18: 129; Voronin, *Zodchestvo*, 2: 189–220, 267–306, 311–24, 364–66; *Pamiatniki arkhitektury moskovskoi oblasti*, 2 vols., ed. E. N. Pod'apol'skii (Moscow, 1975), 2: 220–23; B. A. Ognev, "Uspenskii sobor v Zvenigorode na gorodke," *MIA*, 44 (1955): 20–58; in Nizhnii Novgorod: *TL*, 392, 394; *PSRL*, 8: 17; 15, pt. 1 (2d edn.): 74, 100; 23: 116.



Goehrke's view, drawn from a study of wastelands, that northern Rus' after 1400 experienced an economic depression. One might explain early stages of the slump as a result of plague or as a by-product of the Muscovite civil war. But from 1437 the rate of construction in Novgorod and Pskov fell off. No doubt Moscow's intervention in Novgorod's empire, not to mention the chronic piracy that existed on eastern trade routes with the breakup of Mongol power, hurt Novgorod's economy. Political instability may also have contributed to hard times. It is likely, however, that the gunpowder revolution was at least as important in causing the number of building starts in Novgorod and Pskov to decline. In 1428, the Teutonic Order bombarded Novgorod's border fort of Porkhov. This was the first time that artillery was used systematically against a besieged town in northern Rus'. In response, Novgorod rebuilt Porkhov, doubling the thickness of some sections of its wall to five meters at the base in 1430. In 1444 and 1447, the Order besieged and bombarded Iamgorod, compelling Novgorod and Pskov to undertake urgent countermeasures. When the Order attacked Iamgorod, they found its walls rebuilt so as to allow the besieged to fire back. In 1448, Novgorod reinforced Iamgorod's walls against artillery. It also reinforced the ancient fort at Ladoga in 1446 and its own kremlin in 1450. Pskov built a fort at Gdov in 1431, the vulnerable side of which had a stone wall. Pskov strengthened Ostrov about 1440, Izborsk about 1450, and its kremlin and walls, 1422–1452.²⁷ These projects required the labor of many masons for extended periods and thus steep increases in public spending, which could only have been met by transfers from the private sector. A decline in the construction of family and monastic churches was the result.

In sum, while there may have been a depression after 1400, it could not have been severe or have lasted very long. It is likely that economic growth resumed in northern Rus' by the 1440s, notwithstanding the decline in building starts in the Novgorod land. It remains to inquire how information about building size, materials, construction methods and costs enhance our understanding of statistical trends.

AGAIN, A LARGE MAJORITY OF THE CONSTRUCTION PROJECTS were churches, and, of these, a surprising number were completed in the year in which they were begun or within a short time thereafter. This was possible because most of them were modest in size and simple in structural detail, not only in comparison to Gothic cathedrals of Catholic Europe built at the same time but when compared to

²⁷ Goehrke, *Die Wüstungen*, 66–76. On wars with the Teutonic Order and the rebuilding of forts, see *PSRL*, 4, pt. 1: 123; 16: 185, 191–92; 25: 247–48; *NPL*, 415–16, 423; *Pskovskie letopisi*, 1: 34–5, 39, 50; N. A. Kazakova, *Russko-livonskie i russko-ganzeiskie otnosheniia* (Leningrad, 1975), 36–123. On the gunpowder revolution and its effect on fort building, see Hellie, *Enserfment and Military Change in Muscovy* (Chicago, 1971), 151–59; Kirpichnikov, *Kamennye kreposti*, 46, 54–56, 183–85, 216–62; A. N. Kirpichnikov, "Voennoe delo srednevekovoi Rusi i poiavlenie ognestrel'nogo oruzhiia," *Sovetskaia Arkheologiia* (1957), no. 3, 60–76; V. V. Kostochkin, *Russkoe oboronnoe zodchestvo kontsa XIII–nachala XVI vekov* (Moscow, 1962), 33–34, 39; Kostochkin, "Kreml' drevnego Gdova," 67–100; Rappoport, "Iz istorii," 136–38, 162–83, 190–01; Rappoport and Kostochkin, "K voprosu," 22–28; Aleshkovskii, "Nachal'nye etapy," 333–39; Labutina, *Istoricheskaia topografiia*, 50–51.

churches of pre-Mongol Rus'. The Church of the Archangel Michael on Mikhailov Street (1300–1302), for example, with a base of 237 square meters, was the largest new church built in Novgorod after 1237. It was smaller than St. Parashkeva-Piatnitsa "in the Market" (1207), the biggest built there in the century before the Mongol invasion (some 330 square meters). It was minute compared to the Cathedral of St. Sophia in the Novgorod kremlin (1045–1050), which, even without its galleries, covered 669 square meters.²⁸ Evidence from post-1237 Suzdalia indicates that its churches were on the average only slightly larger than those of Novgorod. The first Church of the Dormition in the Moscow kremlin (1326), occupied at most 226 square meters. The largest church about which we have adequate archaeological data was the Church of the Dormition in Kolomna, about 396 square meters (1379–1382). It was the only six-column church known to have been built in the Muscovite state between 1238 and 1462. The foundation of the main church of the Simonov Monastery in Moscow (1378–1404) may have been larger, about 420 square meters, but archaeological evidence is too fragmentary to be certain.²⁹

Although mastery of brickmaking is well established for northern Rus' before the Mongol invasion, limestone and tufa were the primary building materials. Novgorod builders commonly alternated rows of stone with narrow bricks, most likely as a matter of taste. In the late twelfth century, the emergence of private patronage, demanding smaller, more quickly built, and cheaper structures caused a change in building methods, among them an increased use of local limestone, often cut in irregular sizes. In Suzdalia, esteem for "white stone" churches and the ability to build them, often with exquisite results, made brick a secondary material. When the rate of building increased after the conquest, Novgorod builders continued in the new style but at first built more simply, and more crudely, using limestone almost exclusively. Brickwork appeared, if at all, as a decorative feature framing windows and doors and on pilasters in new churches or in the reconstruction of earlier ones. Because the stone was permeable, they protected it with mortar. In Suzdalia, although little remains of structures built between 1238 and 1400, it seems that artisans forswore brick for stone altogether. There is no certain answer as to why patrons and builders of northern Rus' of the Mongol period preferred limestone to brick. Novgorodians knew how to make bricks although they made them differently than before 1238. And if Suzdalians had lost the art, it is difficult to believe that they could not have soon relearned it from their neighbors. Whatever the reason, building

²⁸ Compare Rappoport, *Russhaia arkhitektura*, nos. 97, 103; Karger, *Novgorod* (4th edn.), 138–39; and the foundation of Notre Dame, Paris (1163–1257), about 5,632 sq. meters; Jean Bony, *French Gothic Architecture of the Twelfth and Thirteenth Centuries* (Berkeley, Calif., 1983), 138.

²⁹ TL, 440; PSRL, 18: 129, 151; 25: 233; Voronin, *Zodchestvo*, 2: 152–72, 185–86, 194–203. It remains to be firmly substantiated that Prince Daniil built a stone church in Moscow in the 1280s or 1290s that was torn down in order to erect the Church of the Dormition; N. S. Sheliapina, "K istorii izucheniia Uspenskogo sobora Moskovskogo kremliia," *Sovetskaia Arkheologiia* (1972), no. 1, 200–14; T. V. Tolstaia, *Uspenskiĭ sobor Moskovskogo kremliia* (Moscow, 1979), 64.

in limestone meant higher costs in work force, if not also in skills, and a correspondingly higher level of prosperity than had existed before 1238.³⁰

Building and improving forts, kremlins, and town walls represented investments of an altogether greater magnitude than church building, and work usually extended intermittently over many decades. There are fourteen separate references to work on Pskov's outer walls between 1309 and 1462.³¹ Its kremlin was completed in 1452. Novgorod walled its kremlin in stages by 1430, but in 1462 the town walls were still partly of wood and earth. Nizhnii Novgorod's kremlin went up in stages and was never finished. While historians know less about border forts, it is certain that some were built hurriedly in expectation of attack, a familiar story in the European Middle Ages. Novgorod supposedly built Iamgorod in thirty-three days. Izborsk was built within a year in 1330. But these and other forts were repeatedly expanded and strengthened.³² In this context, the building of the Moscow kremlin—with its circumference well over twice that of the largest fort, almost twice that of the Pskov kremlin, and greater than that of Novgorod—in little more than a year, 1367–1368, was a singular event.

The Novgorod kremlin, the Pskov kremlin and town walls, and the forts at Staraia Ladoga (rebuilding of 1446), Oreshek, Izborsk, Kopor'e, Iamgorod, and Gdov resembled one another in construction materials and methods. Typically, builders dug a foundation trench and filled it with boulders, limestone slabs, and rough stone to make a footing at least as wide as the base of the wall. Walls were built in alternating rows of granite boulders and blocks of crudely dressed limestone. Upper levels were exclusively of limestone blocks. Stone masons anchored the boulders with a mix of mortar and gravel and used mortar between layers of blocks. They filled interior spaces of thick walls with stones and rubble, solidified with mortar. The exterior walls of the fort at Porkhov and, apparently, of the Moscow kremlin (known only from written sources), however,

³⁰ See Rappoport, *Russkaia arkhitektura*, nos. 95–137; P. A. Rappoport, A. A. Peskova, and G. M. Shtender, "K voprosu o slozhenii novgorodskoi arkhitekturnoi shkoly," *Sovetskaia Arkheologia* (1982), no. 3, 35–46; V. A. Bulkin, "Arkhiturno-stroitel'naia situatsiia v novgorodskom zodchestve kontse XII–nachala XIII vv.," *Genesis i razvitie feodalizma v Rossii. Problemy ideologii i kul'tury*, ed. I. Ia. Froianov (Leningrad, 1987), 217–23; Voronin, *Zodchestvo*, 2; esp. 142, 189, 212–13, on possible use of brick after 1238; M. K. Karger, *Novgorod* (Leningrad, 1961), 93–102 and following, and 269–70, and (4th edn.), 104, 118–20, 138–39, 159–67, 205–09, 212–16; T. V. Gladenko, et al., "Arkhitectura Novgoroda v svete polednykh issledovanii," *Novgorod. K 1100-letiiu goroda. Sb. Statei*, ed. M. N. Tikhomirov (Moscow, 1964), 184–25, 236, 238–39; and Rybakov, *Remeslo*, 662–75, who thought post-conquest construction in Novgorod inferior and prone to collapse. Simpler yes, but pre-conquest building was also susceptible to ruin; for instance, the Church of St. John the Baptist "na opokakh," built 1127–30, soon in ruins, rebuilt 1184.

³¹ *Pskovskie letopisi*, 1: 14, 23, 24, 26–27, 39, 51, 55, 62, and 2: 36, 115; Labutina, *Istoricheskaia topografiia*, 33–34, 46–58, 62–71; Aleshkovskii, "Nachal'nye etapy," 322–47.

³² See references in nn. 19, 20; *NPL*, 379; and *PSRL*, 4, pt. 1: 91 for Iamgorod; for Kopor'e: initial construction in 1280, *NPL*, 323; reconstruction of 1297, *NPL*, 328; and archaeological estimate for a later rebuilding (1360s), Kirpichnikov, *Kamennye kreposti*, 162–64; for Izborsk: construction in 1303, reconstructions of 1303, 1330, approx. 1395, and approx. 1450; *Pskovskie letopisi*, 1: 14, 17; Kostochkin, "Stroitel'naia," 126–43; for Oreshek: 1323, 1352, 1410; *NPL*, 100, 339; *PSRL*, 4, pt. 1: 110, 288, 410, and 16: 57, 159; for Tiverskii gorodok: approx. 1330s; Kirpichnikov, *Kamennye kreposti*, 145; for Ostrov: approx. 1350, rebuilt in 1380s; Rappoport, "Iz istorii," 190–91; and Kostochkin, "O datirovke," 59–65; for Korela: the tower in 1364; *PSRL*, 16: 90; Porkhov: construction, 1387; *NPL*, 381; reconstruction of it and Iamgorod, 1430, 1448; *NPL*, 415–16; *PSRL*, 16: 192; the Gdov fort: begun 1431; *Pskovskie letopisi*, 1: 39; the rebuilding of the fort at Staraia Ladoga in 1446; *PSRL*, 4: 123.

were constructed entirely of limestone blocks with a smooth exterior face, a more expensive material known as ashlar. In both building techniques and materials, these projects differed little from wall building elsewhere in Europe, where rough-cut blocks and rubble were used almost exclusively until 1300 and were common even after that. A. N. Kirpichnikov claimed that Novgorod and Pskov fortifications resembled those in Lithuania, Livonia, and Estonia, even to the facing of walls with alternating layers of granite boulders and limestone blocks. Perhaps so, but V. V. Kostochkin has pointed out important differences. Only the fort at Izborsk, for example, had a central tower resembling the keep or donjon of early European castles.³³ The problem requires further study.

In his study of monumental building in Suzdalia, Voronin put the circumference of the Moscow kremlin of Donskoi's time at 1,979 meters. It enclosed an area not much smaller than today's kremlin and probably had nine towers. Assuming that in thickness, height, and shape its walls were analogous to fortifications in the Novgorod land at that time (approximately two meters thick and eight meters high), and that it was built entirely of limestone, Voronin estimated that it required almost 54,000 cubic meters of stone, of which 14,371 cubic meters were ashlar blocks.³⁴ The calculations are crude and rest on assumptions about construction materials that cannot be tested. We are on firmer ground in using Voronin's formula to estimate the amount of stone used in building the Novgorod forts whose dimensions and building materials are known. The results allow a comparison of the size and relative cost of these constructions.

Of forts in the Novgorod land, Izborsk had the greatest circumference, about 510 meters, and Iamgorod the smallest, approximately 245 meters. Izborsk had numerous towers; Iamgorod two. Using Voronin's formula, I estimate that it required over 15,000 cubic meters of stone to build Izborsk, and about 6,637 to build Iamgorod.³⁵ When completed, the walls of the Novgorod kremlin had a circumference of about 1,465 meters, were three meters thick on the average, and boasted twelve towers. Calculating in the same manner, but increasing the result by one-third to adjust for the greater thickness of its walls, it comes out that builders used almost 60,000 cubic meters of stone!³⁶ Pskov had a smaller kremlin with outer dimensions of about 1,180 meters. But, being vulnerable to attack from the west, its walls were the highest and most massive in northern

³³ The stone wall of the Gdov fort continued alternating rows of boulders and stone to the top of its outer face. The forts at Korela and Tiverskii gorodok were crude affairs built of piled-up boulders. At Korela, only the lower levels were mortared. Tiverskii gorodok stood but two meters high and probably had a wooden parapet; Kirpichnikov, *Kamennye kreposti*, 35–67, 102–18, 114–15, 130–34, 146–49, 164, 168–78, 192–207, 226–55; Rappoport, "Iz istorii," 136–40, 149–64, 168–83, 187–91; Kostochkin, "Stroitel'naia," 126–33; Kostochkin, "Kreml'," 77–85; Kostochkin, "Voenno-oboronitel'noe," 455–56; Voronin, *Zodchestvo*, 2: 177–79, 228–30; Voronin, "Moskovskii kreml'," 62–65; Mongait, "Oboronitel'nye sooruzheniia," 60–91; Goldthwaite, *Building*, 221; Salzman, *Building*, 82–90, 149–54.

³⁴ Voronin, "Moskovskii kreml'," 63; Voronin, *Zodchestvo*, 2: 232. Kirpichnikov, *Kamennye kreposti*, 269, estimated the walls at Kopor'e, Ladoga, and Porkhov before the age of artillery to be 2.2 to 3.3 meters thick and 7.5 to 8.8 meters high (with parapets).

³⁵ Kirpichnikov, *Kamennye kreposti*, 203; Rappoport, "Iz istorii," 169.

³⁶ From table, Voronin, *Zodchestvo*, 229; and diagram and text, Mongait, "Oboronitel'nye sooruzheniia," 59–61.

Rus'. Together with an often massive system of stone outer walls that were unique in northern Rus', it was by far the greatest construction project undertaken before 1463.³⁷ This magnitude of building tends to confirm the impression gained from a tally of projects, namely that, starting not long after 1300, northern Rus' was showing signs of steady economic growth.

Although less is known about construction costs in northern Rus' than in Western Europe, an appropriate place to begin is with a survey of limestone deposits. The cost of transporting stone, in person-days or in money, accounted for a large share of total construction costs. In England, Louis Salzman wrote, the cost of carting stone twelve miles amounted to the value of the stone itself. It cost less to move stone by water. Even so, hauling stone from a hundred miles away was an extraordinary event. Monetary costs of quarrying and moving stone in England probably differed from those in northern Rus', but the technology and the number of person-days of labor needed to do the job were much the same. For this reason, northern Rus' could not have been an exception to the rule that building in stone depended on its local availability.³⁸

Given the importance of the location of deposits for estimating construction costs, one would expect building stone to be the subject of a considerable literature. But, aside from Voronin's survey, now twenty-five years old, I am unaware of any study of Suzdalian quarries. Voronin mentioned limestone deposits on the Volga near Nizhnii Novgorod and in the basins of the Kliaz'ma and Oka rivers (the latter near Murom) that were close to building sites. He speculated that they were known before the Mongol invasion and that their nearness to the Bulgar khanate may account for the legend that Suzdalia had imported its limestone from distant quarries on the Kama River in the Bulgar land. Deposits at Staritsa and Zubtsov in western reaches of the Tver' principality near the Volga, Voronin believed, supplied builders in pre-Mongol Suzdalia and almost certainly were the source for subsequent construction in Tver'. Finally, he mentioned limestone quarries on the Moscow River, and particularly that at Miachkovo, fifty kilometers from Moscow, without which Grand Prince Dmitrii Donskoi could not have built his kremlin in so short a time.³⁹ We know even less about the quarries that might have supplied Pskov and Novgorod. All writers described Novgorod stone as a permeable gray limestone, presumably softer and less amenable to free cutting than that in Suzdalia, referring to it variously as "Il'men" or "Volkhov" stone without pinpointing quarry locations. Kostochkin wrote that Novgorod and Pskov forts were built partly of local gray limestone of the Devonian period. He also called attention to the use of a ferrous limestone found near Lake Il'men.⁴⁰ Lacking better information, I nevertheless can state

³⁷ Labutina, *Istoricheskaia topografiia*, 31–91; Aleshkovskii, "Nachal'nye etapy," 322–49; Kostochkin, "Voenno-oboronitel'nye," 420–21, who claimed that Pskov's walls were among the largest in Europe. But compare with Knoop and Jones, *Mediaeval Mason*, 2–3.

³⁸ Goldthwaite, *Building*, 212–37; Salzman, *Building*, 119–21.

³⁹ Voronin, *Zodchestvo*, 1: 106–07, 306–08, 325–29, 469, and 2: 116–17, 121, 230–31, 343.

⁴⁰ Gladenko, "Arkhitectura Novgoroda," 189; Karger, *Novgorod* (1st edn.), 269–70; Kostochkin, "Voenno-oboronitel'noe," 421–22, 429–31, 455; Rappoport, "Iz istorii," 168–79; Rybakov, *Remeslo*, 663–64.

that the use of limestone on such a scale in the Novgorod land could only have meant that quarries were numerous, close at hand, and accessible by water. It bears repeating, however, that scholars have yet to do tests that would match building stone with a particular quarry.

In Western Europe, patrons usually furnished the stone, and this probably held true in northern Rus'. Quarrying itself was a rural occupation and labor intensive. Only cutters were skilled workers. Unlike building, quarrying went on continually with only seasonal fluctuations. It produced rubble and cut blocks in about equal quantities.⁴¹ Hauling stone to building sites required a much greater work force, making transport the major cost variable in big projects. Although we have virtually no evidence about who transported stone to building sites in northern Rus' and how they were recruited, an adequate work force could only have been assembled by imposing labor obligations on urban and peasant communities. This was above all true of forts, many of which were built on short notice to meet a perceived threat.

It was under exactly such conditions that Dmitrii Donskoi in the fall of 1366 ordered that a stone kremlin be built in Moscow. The stone was brought to Moscow that winter, 1366–1367, over the ice (and not by water, as was common in Europe).⁴² To haul the 54,000 cubic meters of stone and rubble the fifty kilometers from the quarry to Moscow along the Moscow river, Prince Dmitrii had to assemble rapidly laborers, sledges or carts, and horses. Voronin estimated that it required 548,000 person-days to complete the job! This constituted over half of the estimated person-days needed for the entire project from the quarrying of the rock to the finishing of the battlements. If the winter season is defined as the 151 days from November 1 through March 31, it required at least 3,563 laborers, an equal number of sledges or sleighs, and probably twice that number of horses. Labor recruitment for hauling the stone for the Moscow kremlin was of a magnitude that had few counterparts. For comparison's sake, European rulers usually had to make do with less than a thousand conscripts in the "rush" construction of forts. Per capita labor costs for haulers in Suzdalia may not have been as high as those given by Salzman for England or anywhere else where workers were hired. But in medieval construction, as Richard Goldthwaite noted, labor was more valuable than money.⁴³ In the 1360s, Moscow's princes could command unusually large numbers of this commodity.

Similarities in techniques of stone construction in Europe (largely unchanged before 1800), dictated similar patterns of labor use in the thirteenth and

⁴¹ Salzman, *Building*, 119–28; Knoop and Jones, *Mediaeval Mason*, 8–13, 40–45; Voronin, *Zodchestvo*, 2: 147–48.

⁴² *PSRL*, 15, pt. 1 (2d edn.): 83–84; 18: 106. Moscow expected attacks from Tver' and Lithuania in the 1360s, not to mention the ever-present Mongol threat. In 1365, fire devastated Moscow, making the situation critical; Presniakov, *Formation*, 245–52; Cherepnin, *Obrazovanie*, 545–87; Voronin, *Zodchestvo*, 2: 175–76.

⁴³ Based on Voronin's assumption that they employed small peasant carts, *Zodchestvo*, 2: 228–34, with one driver per vehicle. Voronin thought one horse sufficed to pull a cart; it is more likely that two were needed, there being no evidence for large plow horses (or big wagons) in fourteenth-century Rus'. On methods, equipment, and investments of men and horses for hauling, see Knoop and Jones, *Mediaeval Mason*, 45–60; Fitchen, *Building*, 169–87; 117–24; Lynn White, Jr., *Medieval Technology and Social Change* (New York, 1964), 61–73; Goldthwaite, *Building*, 117–24.

fourteenth centuries. Because construction was based on restricted and periodic demand, it resisted efficient organization and, with few exceptions, remained local in managerial and supply mechanisms. Yet building was an occupation of greater scale than were other trades, requiring special methods for the hiring of laborers. Large projects demanded extraordinary methods of recruitment. Patrons generally took on local people at slack times in their normal occupations as unskilled laborers and paid them wages. Towns used a labor tax only for large civic projects; kings and other rulers pressed unskilled labor into service when they had to build a fort at short notice and for other exceptional projects. But rarely did they have the means or power to hold large numbers of workers for prolonged periods.⁴⁴

Situated in the northern extremes of Europe's agricultural zone, Novgorod or Pskov hardly had large reserves of unskilled labor. As in the West, they must have relied on a levy of citizens to build major projects, and their chronicles provide evidence that this was indeed so. In the entry for 1309, one reads that Mayor (*Posadnik*) Boris and the men of Pskov built a stone wall, or under 1323 that Prince Iurii Danilovich and the men of Novgorod built the fort of Oreshek. Where an entry states only that a prince, *posadnik*, or archbishop (as head of state), built a major project, we may assume that it also was a municipal endeavor. In 1430, Novgorod mobilized peasants to work on its walls. Suzdalia undoubtedly had a bigger pool of unskilled peasant labor. When the harvest was in, peasants had ample time during winter months for non-agricultural work. So, when Dmitrii Donskoi mobilized a virtual army of the unskilled on short notice to work on the kremlin, an adequate labor pool was ready and waiting. It is well to remember, however, that this was a one-time achievement that his successors were unable to duplicate before 1462. Also, there is no reason to equate peasant labor with servile obligation.⁴⁵

Nor can one easily make assumptions about whether unskilled workers on lesser projects worked for hire. For example, where in the Novgorod chronicle it is said that the men of Liubiantsa Street built the Church of St. George (1356), and those of Danslavl' Street the Church of St. Demetrius (1394), it is unclear whether the citizenry volunteered the labor or hired out the job. The latter could easily have been the case. As A. L. Shapiro has emphasized, the hiring of labor went on throughout the "feudal" era in northern Rus', particularly in construction and transport. Whichever way it was, the churches in Novgorod and in Suzdalia were small and required negligible labor inputs. Voronin estimated that it took 7,308 person-days over a year's time to quarry and haul the stone, and to build the small (139 square meters) Church of the Intercession on the Nerl' River (1166). This estimate of 7,308 person-days translates to twenty workers

⁴⁴ Fort building could strain the labor market: Goldthwaite, *Building*, 4–9, 117–24; Salzman, *Building*, 30–81; Knoop and Jones, *Mediaeval Mason*, 2–4.

⁴⁵ *Pskovskie letopisi*, 1: 14, and 2: 22; *NPL*, 339; *PSRL*, 16: 57, and further references to communal patronage, for example, the cooperation of Grand Prince Dmitrii (Alexandrovich) and Posadnik Mikhail (Mishinich) in building Kopor'e (1280), *NPL*, 323; *Pskovskie letopisi*, 1: 39; 2: 36, 43, 125; *PSRL*, 16: 192. See V. L. Iarin, *Ocherki kompleksnogo istochnikovedeniia: Srednevekovyi Novgorod* (Moscow, 1977), 230–37, on Novgorod's political leaders.

laboring each day for one year. If no more than half the work force did the actual building, as was estimated for fort construction, there would have been only ten builders, including masons. From a comparison of foundation sizes, it would have taken 6,230 person-days to build the largest church erected in Novgorod after 1238. As that job took up to three years, it would have needed but six to eight builders. By the same measure, only seven to nine workers would have sufficed to put in the 10,410 person-days over the up to four years that it would have taken to construct the largest church in Suzdalia.⁴⁶

Most Soviet writing on architecture and construction assumes that, for the most part, masons and other skilled construction laborers were in service to a lord in pre-Mongol Rus' and in the north after the conquest, even though evidence for the post-1238 era is virtually nonexistent. V. L. Ianin, it is true, demonstrated that a boiar oligarchy dominated Novgorod's politics and economy by 1300. From this, he concluded, townspeople who resided in and around boiar establishments, as well as country people, must have been dependents. Nevertheless, there is little direct evidence, nor is it likely, that townspeople came completely under boiar control, that all artisans lived on boiar property, or that those who did were necessarily dependents. No one can write with certainty about such matters, but if we conclude otherwise for the period after 1300, as Shapiro noted, it would set off northern Rus' sharply from the rest of Europe.⁴⁷

In Western and Central Europe, professional builders and masons were like modern workers in that they almost always hired themselves out for money. Whereas unskilled laborers, once paid, turned to other occupations, masons moved individually or with their apprentices from project to project, each time contracting for wages. Silicosis of the lungs or injury shortened their careers and lifespans, but, while they worked, they were well rewarded and notoriously difficult to organize and control. In Italy, where masons usually could work regularly in one locality, they formed well-organized guilds. In Northern Europe from England to the Baltic, masons had to move about to find regular work. As a result, theirs was the one important trade that did not have a stable guild organization. Even when they were impressed, and they often were, they were paid "a king's wage."⁴⁸ Could it have been so different in Novgorod and

⁴⁶ NPL, 364, 386, 397; PSRL, 4, pt. 1: 375; 30: 111; Voronin, *Zodchestvo*, I: 325–26; A. L. Shapiro, *Russkoe krest'ianstvo pered zakreposhcheniem* (Leningrad, 1987), 240–47.

⁴⁷ Rappoport, "Stroitel'nye arteli Drevnei Rusi i ikh zakazchiki," *Sovetskaiia Arkheologiia* (1985), no. 4, 80–89; P. A. Rappoport, "Zodchie i stroiteli drevnego Smolenska," *Drevniaia Rus' i Slaviane*, ed. T. V. Nikolaeva (Moscow, 1978), 403–06; Voronin, *Zodchestvo*, I: 322–24, 329–36, 465–66, and 2: 120–21, 234, 364, offered evidence that builders were itinerant and for the most part dependent in pre-Mongol Rus', and assumed that they had shops. Voronin said little about the post-1238 status of builders but, by citing the Tver' chronicle that Donskoi mobilized workers to build the kremlin, and the treaty (approx. 1390) between Prince Vasilii Dmitrievich of Moscow and his cousin on their right to command "masters," he implied that they were dependents. Rybakov, *Remeslo*, 712 and following, wrote that Rus' masons, like counterparts elsewhere, did not have a shop organization, but he hedged as to their status. Compare divergent views on Novgorod society by Ianin, *Ocherki*, 230–37; Birnbaum, *Lord Novgorod*, 77–78. Also see Shapiro, *Russkoe krest'ianstvo*, 240–47.

⁴⁸ At large projects, masons organized lodges of fellow workers, which broke up when the work was done; Salzman, *Building*, 30–44; Goldthwaite, *Building*, 115–70, 242–350, esp. 126, 244–49; Murray, *Building Troyes Cathedral*, 111; Knoop and Jones, *Mediaeval Mason*, 66–164; A. R. Bridbury, *Economic Growth: England in the Later Middle Ages* (London, 1962), 14–22; Rösig, *Medieval Town*, 160; Abel, *Agricultural Fluctuations*, 58–62.

Pskov after 1300, or even Suzdalia from the 1360s, where power and patronage were distributed widely enough to cause patrons to bid for masons and patrons rich enough to keep masons continuously busy?

Direct evidence about recruitment and pay of skilled workers relates almost entirely to Pskov, but what was customary there almost certainly held true for Novgorod. The evidence consists of twelve unequivocal references in the Pskov chronicle, all but one tabulated by B. A. Rybakov in his book on Rus' crafts, that skilled builders were hired for wages by the mid-1300s. Variants of the earliest entry state that in 1364 Pskov hired workers for five rubles (apiece) or 200 rubles to pull down the ruined walls of the Church of the Holy Trinity. In 1365, the chronicle recorded that Pskov hired "masters" to rebuild the church. The job took three years; for it, Pskov honored them and paid 400 rubles in wages (*mzdy*). Although this was a big project, the main structure of the church covering 876 square meters, fortifications cost far more: in 1424, after three-and-a-half years, 200 workers completed (rebuilding) part of the kremlin for which Pskov paid 1,000 rubles in wages and 200 rubles for bricks. Six entries specifically referred to masonry (and possibly brick) construction. Eight referred to builders as "masters," and two provided names: a master named Kirill built a church in 1373, and in 1420 "the Pskovites hired (*naiasha*) the masters Fedor and his associates (*drouzhinu*) to provide the Church of the Holy Trinity with new roof panels of lead. The Pskovites could not find masters who knew how to cast leaden panels in Pskov or Novgorod, so they sent to the Germans in Iur'ev (Dorpat), but the accursed ones did not send a master. Finally a master arrived from Metropolitan Photios in Moscow, and master Fedor repaired the Holy Trinity and returned to Moscow."⁴⁹

For Suzdalia, one must work more from inference than evidence in discussing the status of skilled builders. Compared with Novgorod, its patrons were fewer in number and in sum less wealthy. Because most commissions were equally small in size but fewer in number and farther between, it is likely that masons, also fewer in number, had to move about to keep working. Voronin maintained that since Dmitrii Donskoi's time a construction team existed in Moscow and that it worked continuously, if not there, then in apanage centers. But, by the 1390s, Voronin's hypothetical team and possibly other builders could obtain orders from boiars, bishops, and monasteries as well as from Moscow's prince, the metropolitan and apanage princes. Voronin also was convinced that Tver' by then had a small shop working regularly under the patronage of its ruling house. Thus it appears that Suzdalia had a patronage base rich enough to create a demand and one diversified enough to compete for builders. The few bits of

⁴⁹ Rybakov, *Remeslo*, 708, also listed seven post-1462 entries and attempted, 709–11, to compute wages in real terms; *Pskovskie letopisi*, 1:23, 26, 34–35, 39, 54–55; 2: 27–28, 36, 39, 43, 49, 103, 109, 125, 131, 143–44, 152; A. A. Tits, "Obmernye i proeknye chertezhi XVII v. Troitskogo sobora v Pskove," *Srednevekovaiia Rus'*, D. S. Likhachev, et al., eds. (Moscow, 1976), 336–41; Aleshkovskii, "Nachal'nye etapy," 333–35, on dates and location of work on Pskov's walls; and Birnbaum, *Lord Novgorod*, 44–100; V. L. Ianin, *Novgorodskie posadniki* (Moscow, 1962); Ianin, *Ocherki*; Ianin, *Novgorodskaiia*; V. N. Bernadskii, *Novgorod i novgorodskaiia zemlia v XV veke* (Moscow, 1961), 52–266; B. B. Kafengauz, *Drevnii Pskov* (Moscow, 1969); Iu. G. Alekseev, *Pskovskaiia Sudnaia gramota i ee vremia* (Leningrad, 1980), esp. 14–19, 27–44, on the socioeconomic profile of Novgorod and Pskov.

hard evidence that exist support this view. A professional builder, Vasilii Ermolin, was hired to oversee repair of the Kremlin in 1462. There are also two references to work for hire that were not in construction: in 1346, a master named Borisko, probably an Italian, cast bells in Moscow, and a monk Lazar the Serb received "over 150 rubles ["sta bole polutorasta rublev"]" in 1404 to make a clock ("chasy postavi a chiudni i s lunoiu") in the grand princely palace.⁵⁰

To sum up, the evidence, even if it is too sketchy to make sharp quantitative comparisons of wealth, does suggest that the way buildings were built and labor recruited in northern Rus' differed little from how such things were done in the rest of Europe. Also, it often supports and never runs counter to statistical indications that northern Rus' experienced a disastrous economic depression for ninety years after the Mongol invasion, followed by an equally dramatic upturn that continued almost unabated to 1462. It remains to inquire what building records reveal about the relative wealth of principalities, how wealth was held in each, and how this translated into political power in northern Rus'.

LOOKING AGAIN AT FIGURE 4, which shows monumental construction by principality, 1238–1462, we must wonder at Novgorod's wealth. The economic upturn came there first and most strongly; for the century 1238–1337, twenty-nine of forty (or 73 percent) of all projects, including all forts and walls, were built in the Novgorod land. Even after the recovery reached Suzdalia and the economy of northern Rus' "took off," Novgorod's record easily surpassed that of other principalities. It built 147 (or 53 percent) of 280 projects recorded between 1338 and 1462. If one adds the sixty-eight projects built in the Pskov principality after independence from Novgorod in 1347, the combined total is an overwhelming 77 percent. It includes every stone fort and wall built in northern Rus' except the Moscow kremlin and the partially stone kremlin in Nizhnii Novgorod. Novgorod even finished six churches in the plague year 1417.⁵¹

Patrons of between seventy-seven and eighty-five of 147 "private" projects in the Novgorod land can be identified. Novgorod's archbishops (not as head of state) were most prolific, building forty-four to forty-six structures, one co-financed by the Grand Prince of Vladimir. Boiars built from seventeen to twenty, commoners nine to eleven, and together they built two, totaling 38 percent of known patronage. It is likely that these groups also built most of the private projects for which no patron of record is listed, if only because forty-two buildings were on sites that suggest lay patronage. Abbots built the remaining six, four dating to 1310 or earlier.⁵² Boiars and prominent citizens thus had

⁵⁰ The Nikon chronicle called Master Boris "a Roman"; Voronin, *Zodchestvo*, 2: 364–66, 445; *PSRL*, 10: 217; 18: 96; 23: 157; 25: 232–33.

⁵¹ *NPL*, 407. Pskov built only five projects before independence.

⁵² Archbishops and boiars eclipsed princes as patrons from the 1130s; Rappoport, "Stroitel'nye," 86; Bulkin, "Arkhitekturno-stroitel'naia," 218. Episcopal patronage: *NPL*, 327, 328, 331, 334–35, 339, 343, 346–48, 354, 362, 367, 369, 393, 394, 400–01, 403, 407, 415–16, 418–25; *TL*, 382; *PSRL*, 4, pt. 1: 280, 290–91, 384, 389; 30: 107, 111. Boiar construction: *TL*, 382, 385; *NPL*, 332–33, 364–65, 379–80, 383, 385, 387, 388, 393, 397, 400, 404, 414, 417; *PSRL*, 4, pt. 1: 287, 295, 305, 351,

considerable wealth, as one might expect in a mercantile society. They used it to build family chapels (at least nineteen) and parish churches, and to purchase country estates. These estates often were endowments for “founder” (*ktitorskie*) monasteries, for which they built at least eleven stone churches in and outside of town and over which the patron’s family retained control.⁵³ As far as is known, not one boiar built a stone palace before 1463.

Ianin and the historian of the Novgorod church, A. S. Khoroshev, make a solid case that parish and private churches were substantially free of episcopal control and that “founder” monasteries were totally free of the archbishop. Patrons thus protected their investment, not only from the archbishop but from division by family inheritance. Novgorod’s patricians no doubt had other motives. Parish churches were at once statements of self-esteem, civic virtue, and power. Goldthwaite’s description of the similar building in contemporary Florence as a “happy convergence of a different kind of public duty and purely private interests” is equally appropriate for Novgorod. “Founder” monasteries were refuges. There boiars and their relatives might be tonsured and find peace at the end of their days. There they could ensure that prayers were said for the souls of their ancestors and, when they died, for their own. Everywhere in Europe, plague caused elites to build personal or family memorials.⁵⁴ Novgorod’s patriciate must have done the same. The churches were small, and one can hardly doubt that this was more by choice, because of the purposes for which they were built, than the result of labor shortages caused by plague.

Clearly, Novgorod played a key role in the political life of northern Rus’. The right to collect tribute in wealthy Novgorod was one of the most important benefits of being grand prince, especially so from 1238 to at least 1320, when Suzdalia’s economy lay in ruins. We can easily appreciate why Grand Prince Aleksandr Nevskii and his successors considered it more important to control and defend Novgorod than to war for possessions in Suzdalia. Yet, if wealth alone sufficed, Novgorod would have become the dominant power in northern Rus’. To the causes that historians have given for Novgorod’s failure to do so—its geographic vulnerability, internal instability, alleged inability to feed

382–83; 11: 238; 16: 90, 193; 30: 108, 112; Ianin, *Ocherki*, 152–59. Commoner building: *TL*, 382; *NPL*, 364, 368–69, 386, 397, 425; *PSRL*, 4, pt. 1: 290, 292, 375; 30: 111, 114; Karger, *Novgorod* (1st edn.), 140–41. Joint projects: *TL*, 394; *NPL*, 372; V. N. Lazarev, *Iskusstvo Novgoroda* (Moscow, 1947), 102–04. By abbots: *NPL*, 328, 333, 402, 412; *Pskovskie letopisi*, 1: 14; *PSRL*, 30: 99. Boiars may have been patrons to some churches said to have been built by residents of a street and ascribed to commoners. Assumptions that unidentified patrons were lay people also follows from knowledge that clerics wrote the chronicles and had better knowledge of church patronage and better reason to record it.

⁵³ V. L. Ianin, “‘Semisobornaia rospis’ Novgoroda,” *Srednevekovaiia Rus’*, D. S. Likhachev, et al., eds. (Moscow, 1976), 108–17; V. L. Ianin, “Iz istorii vysshikh gosudarstvennykh dolzhnostei v Novgorode,” *Problemy obshchestvenno-politicheskoi istorii Rossii i slavianskikh stran. Sb. statei k 70-letiiu Akademika M. N. Tikhomirova* (Moscow, 1963), 118–27; A. S. Khoroshev, *Tserkov’ v sotsial’no-politicheskoi sisteme novgorodskoi feodal’noi respubliki* (Moscow, 1980), 159–77, and list of monasteries and their lands, appendix 2, 203–13.

⁵⁴ Ianin, “‘Semisobornaia rospis’,” 108–17; Ianin, “Iz istorii,” 118–27; Khoroshev, *Tserkov’*, 156–77. Consult Nancy Shields Kollmann, *Kinship and Politics: The Making of the Muscovite Political System, 1345–1547* (Stanford, Calif., 1987), on kinship in medieval Russian culture; and Goldthwaite, *Building*, 12, on post-plague western building trends.

itself, and demographic weakness—I would add one more: as Novgorod grew rich, its leaders spent considerable amounts on private construction and land acquisition. Construction brought prosperity to the building trades and to those who controlled building materials, but it neither generated economic growth nor contributed to the town's security. In their spending priorities, Novgorod's elite was not so different from contemporary upper classes in Flanders and Florence.⁵⁵ In fairness, Novgorod's leaders spent considerable sums on the city's kremlin and on forts that protected its trade routes to the West. And, between 1438 and 1462, when western artillery threatened the city's forts, Novgorodians stopped private building almost entirely in order to reinforce them. Why they did not see the need to better fortify their eastern frontier awaits a satisfactory explanation.

In Suzdalia, building records indicate that Moscow and, to a lesser extent Tver', began to generate increasing wealth in the fourteenth century, although per capita income there must have been far less than in the Novgorod land. Also, as might be expected in largely agricultural Suzdalia, wealth was more narrowly held and patrons fewer in number. In fact, senior princes and metropolitans had a hand in 68 percent of the projects for which patrons can be identified. Monastic patrons were a distant second, participating in 15 percent, a third of these being in partnership with princes and metropolitans. Apanage princes were still further down the list, and even this measure does not adequately indicate their relative economic weakness. Patronage records also indicate that senior princely families built only in their cities of residence with very few exceptions. Although Vladimir was the capital of northern Rus' until Donskoi's reign (1360–1389), the only construction in Vladimir after 1237 was a tiny chapel attached in 1300 to the Church of the Dormition, probably by Metropolitan Maxim.⁵⁶

Between 1285 and 1290, Prince Mikhail Iaroslavich, his mother Kseniia Georg'evna, and Bishop Semen built the episcopal Church of the Transfiguration in Tver', the first new stone structure built in Suzdalia after the conquest. Tver' continued to build masonry structures until 1462 in every quarter-century but one, 1363–1387, in which it fell on hard times after siding with Lithuania in a losing struggle against Dmitrii Donskoi. One can hardly doubt that the economy of Tver', and its record of construction, would have been more buoyant had Mikhail Iaroslavich (d. 1318) kept the grand princely crown of Vladimir for his line. In the fifteenth century, the rate of building picked up, a likely sign of better times. The princes and bishops of Tver' surely controlled most of this wealth. Of fourteen buildings built after 1387, senior princes paid for nine and possibly a tenth; the bishop of Tver' built three, and together they built another. None was built by an apanage prince, a fact that strengthens the

⁵⁵ Nicholas, *Towns and Countryside*, 267–329; Herlihy, "Distribution," 155–57; Goldthwaite, *Building*, 29–30, 50–51; Goldthwaite, *Private Wealth*, 78–85 and following; Martines, *Power and Imagination*, 171–72.

⁵⁶ Its foundation was 42 sq. meters. *PSRL*, 30: 101; Voronin, *Zodchestvo*, 1: 355–56; Sakharov, *Goroda*, 48–49.

Distribution of Patronage in Suzdalia, 1238–1462

<i>Patron</i>	<i>Known</i>	<i>Probable</i>
Princes*	25	5
with Metropolitan	1	0
with Monasteries	1	2
with Bishops	2	0
with Boiar	1	0
with Boiar & Metropolitan	1	0
Total, Princes	31	7
Metropolitans	6	4
with Prince	1	0
with Prince, Boiar	1	0
with Monasteries	2	0
Total, Metropolitans	8 (10)	4
Bishops	7	1
with Princes	2	0
Monasteries	2	3
with Princes	1	2
with Metropolitans	2	0
with Apanage Prince	1	0
Apanage Princes	3	2
with Monasteries	1	0
Boiars	4	0
with Prince	1	0
with Prince, Metropolitan	1	0
Total, Others	17 (25)	6 (8)
Total, Unknown	3	0

* Includes princes of Moscow, Tver', and Nizhnii Novgorod.

case of those who have argued that Tver' was not seriously weakened by apanage division.⁵⁷

Nizhnii Novgorod experienced a spurt of monumental building after 1341, when the Mongols made its prince, Konstantin Vasil'evich of Suzdal', grand prince and a rival of Moscow. As in Tver', construction was almost entirely the

⁵⁷ Patronage records: *TL*, 343, 345, 449; *PSRL*, 4, pt. 1: 246; 6: 132; 11: 156, 202; 15: 470, 488, 490–91, 494–95; 15, pt. 1 (2d edn.): 165–66, 186; 25: 233; N. P. Likhachev, *Inoka Fomy Slovo pokhval'noe o blagovernom Kniaze Borise Aleksandroviche* (St. Petersburg, 1898); Langer, "Russian Medieval Town," 88–93; Voronin, *Zodchestvo*, 2: 137–43, 373–414. Dmitrii Donskoi and Algirdas twice fought across Tver' territory; Dmitrii besieged Tver' and forced its surrender in 1375; Cherepnin, *Obrazovanie*, 557–82. Presniakov, *Formation*, 172–87, maintained that apanage divisiveness weakened Tver'; V. A. Kuchkin stated that it was insignificant, *Formirovanie gosudarstvennoi territorii severo-vostochnoi Rusi v X–XIV vv.* (Moscow, 1984), 167–98. Also see E. Klug, "Das Fürstentum Tver' (1247–1485)," *Forschungen zur osteuropäischen Geschichte*, 37 (1985): esp. 123–25, 148–57, 209–16, 230–32.

result of princely generosity. Konstantin made Nizhnii Novgorod an episcopal see and rebuilt the thirteenth-century Cathedral of Our Savior in 1350–52. The Mongols ceased to favor Konstantin after 1353, causing him and his sons to come under Moscow's domination. But Nizhnii Novgorod continued to build until the mid-1370s, its prosperity levered by commerce and perhaps subsidies from Moscow owing to its strategic frontier position at the confluence of the Oka and Volga rivers. Metropolitan Aleksei built a stone church there; Boris and Andrei Konstantinovich built two. In 1365, Boris began to wall the kremlin in stone, and his brother Dmitrii later resumed construction. But, before it was finished, a Mongol civil war spilled into Suzdalia. Mongol armies sacked and burned Nizhnii in 1376 and 1378, bringing its prosperity and building boom to an abrupt end.⁵⁸

In 1326, Grand Prince Ivan Kalita and Metropolitan Petr built the Cathedral of the Dormition in the Moscow kremlin. Although it was small, it was Moscow's first stone building and one of its most important, bringing the metropolitanate into joint tenancy and often political cooperation with Moscow's princes, and creating the basis for Moscow's earliest ideological claims to rule northern Rus'.⁵⁹ Thenceforth, Moscow's record of masonry construction in each time period was greater than the combined total for all other principalities in Suzdalia. In the last quarter-century, 1438–1462, it was the only principality in northern Rus' to show an increase.

Patronage records indicate that the principal residents of the Moscow kremlin, the princes of Moscow or their spouses, alone or with others, built from fifteen to nineteen stone structures, and the metropolitans of Rus' (after Petr) funded or co-sponsored construction of seven and possibly eleven. Including their joint patronage of the Cathedral of the Dormition, they accounted for up to 63 percent of the forty-nine masonry buildings in the Moscow and, later, Moscow-Vladimir principality. Moscow's princes also helped Novgorod build its fort at

⁵⁸ *TL*, 392, 394; *PSRL*, 8: 17; 10: 230; 23: 116, 164; 25: 238, 263; 15, pt. 1 (2d edn.): 60, 74, 100; *Nizhegorodskii letopisets*, 12–17; Voronin, *Zodchestva*, 2: 43–54, 208–16. Nizhnii Novgorod was not listed as a town "of stone" in the addendum to the "Commission" ms. of the Novgorod chronicle entitled *a se imena gradom ruskym, dalnim i blizhnim*, *NPL*, 477. Tatars sacked Nizhnii Novgorod again in 1409 and 1445; Presniakov, *Formation*, 215–25; Fennell, *Emergence*, 214–19; Kuchkin, *Formirovanie*, 199–263; Cherepnin, *Obrazovanie*, 582–96, 663–73; Langer, "Russian Medieval Town," 108–19.

⁵⁹ V. A. Kuchkin, "Skazanie o smerti metropolita Petra," *Trudy otdela drevnerusskoi literatury*, 18 (1962): 59–79. Metropolitan Petr's successors lived in the kremlin (finally in the Miracle Monastery built by Metropolitan Aleksei), held services in its Church of the Dormition, and were buried there. Although they quarreled with Moscow's princes, their interests more often overlapped, causing one to support or act in consort with the other. The subject has a large literature: E. Golubinskii, *Istoriia russkoi tserkvi*, 2 vols. (St. Petersburg, 1900–17), 2, pt. 1: 105–15, 133–44, 146–53, 172–87, 190–95, 198–216, 226–62, 299–345, 361–89, 484–514; John Meyendorff, *Byzantium and the Rise of Russia* (Cambridge, Mass. 1981); Presniakov, *Formation*, 113–15, 238–45, 252–61, 292–312, 382–85; Fennell, *Emergence*, 68–73, 124–34, 191–92; I. B. Grekov, *Vostochnaia Evropa i upadok Zolotoi Ordy* (Moscow, 1975), 105–27 and following; G. M. Prokhorov, *Povest' o Mihae* (Leningrad, 1978); Gustave Alef, "Moscow and the Council of Florence," *American Slavic and East European Review*, 20 (1961): 389–401; N. S. Borisov, "Moskovskie kniazia i russkie metropolity XIV veka," *Voprosy istorii* (1986), no. 8, 30–43; N. S. Borisov, *Russkaia tserkov' v politicheskoi bor'be XIV–XV vekov* (Moscow, 1986). On the political significance of ecclesiastical relations with Lithuania, see also Kazimierz Chodynicki, *Kościół Prawosławny a Rzeczpospolita Polska (1370–1632)* (Warsaw, 1934); Horst Jablonowski, *Westrussland zwischen Wilna und Moskau* (Leiden, 1961), 49–55, 74–95; and letter of Metropolitan Iona, *Russkaia istoricheskaia biblioteka*, 6 (2d edn., 1908), no. 81, cols. 619–26.

Oreshkek; together with its archbishop, they built a church in the prince's residence in Novgorod (1342–1343); and they assisted Pskov in wall construction (approximately 1380). The metropolitan built a church in Nizhnii Novgorod, noted above. Although the sources of income of the metropolitanate and of Moscow's princes are generally known, there is little specific information, even in the fifteenth century, about amounts. But, for most of the period after 1237, the favor of the Mongol khans was a major reason for the prosperity evident in patronage records of these dignitaries, above all for Moscow's princes, given that they held no unusual geographical advantage in Suzdalia or special resources. Success in winning, holding, and using the grand princely title was crucial if they were to prosper.⁶⁰

Names of lay patrons other than Moscow's princes in the construction records provide a pattern of wealth overwhelmingly tied to the kremlin. In 1340, Boiar Protasii was co-patron with Grand Prince Ivan Kalita of a monastic church in Moscow. Protasii was founder of the Vel'iaminov-Vorontsov boiar clan. His line was said to have come to Moscow with its first prince, Daniil, and probably resided in the kremlin. From about 1368, members of the Khovrin family built and rebuilt a stone church in their family palace in the Moscow kremlin and were sponsors, in one case with the grand prince, of two buildings and a wall of the Simonov Monastery in Moscow. A descendant of a Greek merchant family of the Genoese town of Sudak in the Crimea, the first Khovrin (originally Khovra), Stefan, came to Moscow around 1350 and lived in the kremlin. His grandson attained boiar rank. The Simonov Monastery was notorious for political ties with Moscow's princes as well as for its wealth and influence in the church. Residents of the kremlin may also have been the unknown patrons of a chapel in the Simonov Monastery and of the Church of St. George in a monastery of the same name on the Neglinnaia River in Moscow.⁶¹

There exist but four certain and three probable records of patronage by apanage princes. In the late 1370s, apanage Prince Vladimir Andreevich built a monastic church and refectory in his domain of Serpukhov (he also had a

⁶⁰ Princely patronage: *PSRL*, 5: 256, 274; 6: 130, 235–39; 18: 129, 151; 23: 102, 114, 133, 157; 25: 277; 1 (2d edn.), 531; *TL*, 359, 360–61, 384, 419, 440, 443–44; Voronin, *Zodchestvo*, 2: 152–53, 157–64, 175–79, 185–86, 194–203, 245–64, 266; V. A. Kuchkin, "K istorii kamennogo stroitel'stva v moskovskom kremle v XV v.," *Srednevekovaiia Rus'*, D. S. Likhachev, et al., eds. (Moscow, 1976), 293–97; Veselovskii, *Issledovaniia*, 211–12, 444. *TL*, 371; Voronin, *Zodchestvo*, 2: 159–60, 189–94, 205, mention buildings they probably funded. Princely endowments in other lands: *NPL*, 339, 354; *Pskovskie letopisi*, 1: 23; *PSRL*, 16: 57; 30: 107. Patronage of metropolitans: *TL*, 381, 406; *PSRL*, 8: 28, 30; 23: 113; 30: 125; Voronin, *Zodchestvo*, 2: 181–82, 206; and probable instances: *PSRL*, 25: 271, 276; 21: 315–16; Voronin, *Zodchestvo*, 1: 355–56, 2: 265–66, 325–37. Patronage by prince and metropolitan in Nizhnii Novgorod: *TL*, 358; *PSRL*, 23: 116; 25: 167–68; Voronin, *Zodchestvo*, 2: 152–57, 215–16. On church administration and wealth, see Golubinskii, *Istoriia*, 2, pt. 2; Veselovskii, *Feodal'noe zemlevladienie*, 329–455. To my knowledge, Mark Zlotnik, "Muscovite Fiscal Policy," *Russian History*, 6 (1979): 343–58, is the only study of princely revenues. It is descriptive and focuses on post-1462 Muscovy.

⁶¹ Records: *PSRL*, 6: 237; 18: 151, 205; 22, pt. 1: 510; 23: 154; 25: 275; Voronin, *Zodchestvo*, 2: 163–64, 185–86, 266; Veselovskii, *Issledovaniia*, 444–45. On Khovrins and Vel'iaminovs: Veselovskii, *Issledovaniia*, 211–29, 442–49; Gustave Alef, "Diaspora Greeks in Moscow," *Byzantine Studies*, 6 (1975): 26–34; and Kollmann, *Kinship*, 49, 209–10, 237–38 and following, who, unlike the others, called Stefan's son Vladimir. Also see Raba, *Moscow Kremlin*, 7–10; I. U. Budovnits, *Monast'ry na Rusi i bor'ba s nimi krest'ian v XIV–XVI vv.* (Moscow, 1966), 69–70, 82–84; Ivina, *Krupnaia votchina*, 34–83.

residence in the Moscow kremlin). He was a wealthy man, richer perhaps than the prince of Tver', though, judging by construction records, far less wealthy than Moscow's rulers. But for one minor exception, Vladimir and his descendants also strongly supported the senior branch of his line in Moscow. The same held for Prince Andrei Dmitrievich, who very likely was patron of two churches built in his apanage of Mozhaïsk in the 1390s. Only his brother Iurii, who built or co-sponsored two churches and probably another (two in Zvenigorod, one at the Trinity-St. Sergei Monastery), and Iurii's sons challenged the hegemony of Grand Prince Vasilii Vasil'evich (1425–1462) of Moscow. The relative economic insignificance of these records is in part the result of the disproportionately heavy share of the Mongol tribute that Moscow's princes placed on apanage princes. It also helps us to understand why Iurii's line was no match for Vasilii and his allies in the dynastic civil war of the 1420s to 1440s. Bishops or abbots built six other structures in Suzdalia.⁶² There is no evidence that Moscow merchants ever built stone churches (or palaces), nor do sources allow us to speculate as to why they differed in this with their Novgorodian counterparts.

Among recipients of patronage in Moscow's domains, monasteries led the way, being the object of construction grants in twenty-five of the forty-nine recorded cases. Non-monastic patrons built ten to twelve of these and in six other cases provided a share of the funds. Political wisdom and, as in Novgorod, self-esteem and religious motives combined to account for most of the donations. Only eight of these projects were built in or by monasteries of the "common-life" (*obshchezhitnye*), four being in the Simonov Monastery and completed in 1404 and after. The Trinity-St. Sergei Monastery, the first monastery of this sort in Suzdalia and the progenitor of most others in northern Rus', became rich enough, and forgetful enough of the founder's concern for poverty, to build two and perhaps three masonry buildings, beginning about 1405. Apparently, these were the only cases in which a monastic community had both means and independence to act on its own.⁶³

JUDGING BY CONSTRUCTION RECORDS, Moscow from the 1330s became much richer than Tver' and other principalities in Suzdalia. However, it was far less

⁶² Records: *TL*, 396–97; *Pamiatniki arkhitektury*, 2: 215, 220–22; Voronin, *Zodchestvo*, 2: 207, 267–306, 311–20; about apanage princes and the dynastic war, see Presniakov, *Formation*, 147–64, 283, 312–39; L. V. Cherepnin, *Russkie feodal'nye arkhivy XIV–XV vekov*, 2 vols. (Moscow, 1948–51), 1: 31–45, 63–80, 100–50; Cherepnin, *Obrazovanie*, 715–810; Gustave Alef, "A History of the Muscovite Civil War: The Reign of Vasilii II (1425–1462)" (Ph.D. dissertation, Princeton University, 1956); Nancy Shields Kollmann, "Kinship and Politics: The Origin and Evolution of the Muscovite Boiar Elite in the Fifteenth Century," (Ph.D. dissertation, Harvard University, 1980), 273–342, has a more satisfactory discussion of the dynastic war than Kollmann, *Kinship*, 133–34, 153–57; V. A. Kuchkin, "Spodvizhnik Dmitrii Donskogo," *Voprosy istorii* (1979), no. 8, 104–16; A. L. Khoroshkevich, "K vzaimootnosheniiam kniaziei moskovskogo doma vo vtoroi polovine XIV–nachale XV veka," *Voprosy istorii* (1980), no. 6, 170–74; Roublev, "Le tribut," 487–530 on the burden of Mongol tribute. Records for bishops and abbots: *PSRL*, 23: 144, 25: 277, 1 (2d edn.): 539; Voronin, *Zodchestvo*, 2: 203–05, 266, 307–10.

⁶³ Building records: *PSRL*, 1 (2d edn.), 531; 5: 256, 274; 8: 28, 31, 244; 12: 113, 198; 18: 151; 22, pt. 1: 510; 23: 113; 25: 233, 275, 277; 30: 125; *TL*, 360–61, 381, 396–97, 406; Voronin, *Zodchestvo*, 2: 157–64, 181–82, 185–86, 189–94, 205–07, 225–27, 264–66, 279–89, 299–306, 311–24; Veselovskii, *Issledovaniia*, 211–12, 444–45. Two patrons remain unidentified. On the importance of Sergei's movement in the economic revival of northern Rus': Langer, "Plague"; Budovnits, *Monastiri*, 112–258; Ivina, *Krupnaia votchina*, 34–84; Goehrke, *Die Wüstungen*, 63–65.

affluent than Novgorod or Pskov, although it may have been gaining on them shortly before 1462. If there were accurate population estimates for Novgorod, Pskov, and Moscow, they would certainly show that disparities in per capita wealth between Novgorod and Pskov as against Moscow, calculated as a ratio of building units to population, were even greater. In Suzdalia, wealth was narrowly held, being in the strongboxes of princes or, as with Moscow, also in the coffers of kremlin adherents and allies. Moscow's rulers were also the only princes to build in other principalities. Finally, it should be stressed that Dmitrii Donskoi of Moscow in 1367–1368 invested in a kremlin of stone. Although its walls were thinner than those of Novgorod and Pskov that came to be built to withstand western artillery, and although some of its walls crumbled in the fire of 1445 and were partly rebuilt of wood, it was the only stone kremlin in Suzdalia. With its construction, Dmitrii and his successors gained an important military advantage over their rivals. In 1368 and 1370, the kremlin withstood three-day and eight-day sieges by armies of Prince Algirdas of Lithuania. Khan Tokhtamysh, it is true, took it by force in 1382, scaling its walls with ladders—the Ermolin chronicle reports that “the kremlin then was still low”—to loot and burn its palaces and churches.⁶⁴ But the single-mindedness with which its princes concentrated wealth and used it for military advantage must count, along with their diplomatic skill, unusually close-knit political institutions, and luck in producing just enough male progeny, among the principal reasons for Moscow's success in winning political sway over northern Rus'.

⁶⁴ By trickery, Tokhtamysh lured Moscow's commander and notables from the kremlin and killed them. The earliest accounts of the attack clearly state that he then took the kremlin by siege using ladders to scale its walls; *TL*, 384, 388, 391, 423; *PSRL*, 15, pt. 1 (2d edn.), 143–44; 23: 114, 127–29, 157; Voronin, *Zodchestvo*, 2: 175–81; Voronin, “Moskovskii kreml',” 52–66; Salmina, “Povest',” 134–51; Cherepnin, *Obrazovanie*, 642; Raba, *Moscow Kremlin*, 8–10. Later, embellished accounts said that by deceit Tokhtamysh's troops also gained entry through the kremlin gate: *PSRL*, 4, pt. 1: 332–33, accepted by George Vernadsky, *The Mongols and Russia* (New Haven, Conn., 1953), 266. I am unclear why Raba considered the citadel at Tver', built entirely of wood, to be stronger than the Moscow kremlin in the mid-fifteenth century.

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