Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-0-1. Medieval University Classroom

CHAPTER IV

MEDIEVAL ECONOMIC THOUGHT AND INTELLECTUAL DEVELOPMENTS

1. Private Property Rights and Wealth  537

2. Money, Trade, Just Price and Just Wage  547

3. The Idea of Usury and Interest Rates  557

4. Medieval Economic Thought in Islam  567

5. The Rise of Medieval Universities in Europe  577


(Please CLICK EACH LINE of the Middle Column TO SEE THE CONTENTS)
Chapter IV. Economic Thought and Other Intellectual Developments


Chapter IV. Economic Thought and Other Intellectual Developments

CHAPTER IV. MEDIEVAL ECONOMIC THOUGHT AND OTHER INTELLECTUAL DEVELOPMENTS

In the Middle Ages, social science was not developed except in limited areas like law, philosophy, or theology, so most economic ideas were framed by non-economists like philosophers, theologians, or lawyers. "The medieval world was not one of econometrics and global markets, but one of theological economy. Economics as a discrete discipline did not exist, so that, strictly speaking, Medieval Economic Thought is a misnomer. All thought, whether political, philosophical, legal, scientific, or economic would have been regarded as an aspect of theology. This means that much economic thought has to be harvested from theological works, written by scholastics, many of whom were mendicant friars. Not surprisingly, medieval economic ideas are heavily imbued with questions of ethics and morality, with the motives rather than the mechanics of economic life. It was not until the early Renaissance period that people started to reflect on specifically economic topics."¹ Since economics is basically concerned with matters, economic thought is concerned with production, consumption, distribution, and welfare, either in micro- or macro-economic senses. In the course of those activities, economic relations are formed, and are regulated by authorities based on social norms and rules. Scholastic thinkers considered the society in which they lived to be the Roman Church. So Christian morality governed economic relations of society, therefore, their morality became the basis of medieval economic thought.

As discussed in the previous chapters, the Church dominated all aspects of medieval life. It controlled education, and therefore the shaping of attitudes. In formal terms this meant first the monasteries and cathedral schools, and later the universities. Less formally, education took place through pastoral instruction in pulpit and confessional. In towns and villages, fairs and markets, the Church controlled the whole rhythm of life. Time was measured by the church bells, the calendar by the liturgical year, and leisure by holy days. But it had a more personal and direct hold over the economic life of Christians. "The pope, as the head of the Christian body, claimed to be the universal judge of all mankind. This meant that everyone was subject to the law of the Church, canon law, and the jurisdiction of the ecclesiastical courts. The legal competence of the ‘courts Christian’ was enormous and included most economic matters. The Church claimed jurisdiction over all cases involving the clergy, even those in the most minor orders. It judged all matters which involved an oath, which meant matrimonial and probate matters, invariably concerned with property, and a whole host of other things, including commercial contracts."²

The aim of the Christian society was salvation, union with God in Heaven, but earthly life is still with material matters. The Church was the largest land owner in Europe, mostly under the hands of bishops and abbots. “Monks would be involved in the affairs of town and market-place through their lordship of boroughs, and in the country the parish priest should participate in the local economy as he disposed of tithe, often paid in kind, or the produce of his glebe land. Both monasteries and parishes had a special responsibility for the care of the poor and disadvantaged, and so for the distribution of charity…Because material matters were thought to be of so little account, the Church put a firm brake on economic development. It actively discouraged people from wanting to better themselves because to be socially ambitious, to want to be upwardly mobile, was a sin. Let every man abide in the same calling wherein he was…The only justifications for working to earn more than mere substance were to perform pious works, to make reasonable provision for future emergencies, or to support offspring…The Church condemned anything or anyone involved in money-making. Trade and merchants were especially frowned upon."³ To take interest on loans is considered as usury like robbery. However, by the end of fourteenth century, these dynamics began to change in every aspect of society.

¹ For a more detailed discussion, see Chapter IV of "The Middle Ages from 750 to 1400" by [Author].
² Ibid.
³ Ibid.
As a product of continuous growth in the long period of time, medieval economic ideas were influenced by four major elements, including the Roman law, the Germanic heritage, Christianity and Church, and Aristotelianism. First, the Roman law, *Corpus Juris Civilis of the Institutes*, the *Digest*, and the *Code* came from individual laws with legal opinions, edicts, and ordinances, which originated from ancient times although alterations, modifications, and additions were made by the compilers themselves and pre-Justinian authors. It refers not only to the legal system of ancient Romans but also to the law that was applied throughout Europe until the end of eighteenth century. The law deals with property, its acquisition and exchanges, and various contracts such as for buying and selling by consent. Roman law embraced natural law ideas in equality of man which is fundamental in economic and commercial deals, so that civil law systems and economic thought were influenced in Western Europe. Gratian’s *Decretum* was a collection of Canon law compiled and written in the twelfth century as a legal textbook by the jurist known as Gratian; which was a private compilation, but gained wide acceptance as authoritative. Roman jurists separated the legal right using the thing from factual ability possessing the thing, and developed the standard types of contract in sales, work, hire, and services. Being accepted as a fact in all parts of the world, “slavery was part of the *ius gentium* but not of the *ius naturale*.“ Rights of the people varied by the individual status: citizens versus foreigners, and freemen versus slaves.

Second, the Germanic heritage was similarly influential. The social and economic unit of Germans was the village community consisting of self-sufficient households having a similar degree of wealth and democracy. The community, prior to the individual, was cohesive with brotherhood. Things were traded on the barter system with common values without gains. Their ideas and customs were different from the Romans: the Romans established the law of individual property rights, but the Germans depended on the community with a broad sense of individualism. Germanic property belonged primarily to the family or clan; individual households owned arable lands; and members of the community worked together. There was a sharp distinction between private and public rights, but for the Teutons “these rights were mutually determining and faced into one another.” Roman law made property rights rather absolute and rigid, while Germanic custom made these rights relative and changing. The Germanic community had four kinds of landed property: dwelling places and gardens belonged to private property, but arable and waste lands followed the plans or projects of the community in the control of developments. The Germanic culture was less controllable than the Roman law in economic thinking, which characteristic was emphasized in personal property rights and some other matters.

Third, Christianity was most influential in determining medieval economic thought. It was in the spirit of cosmopolitanism embracing all classes and races; and the Church preached the natural rights of equality among men, and condemned the slavery: in the law of nature, men owned all goods in common, which was the basis of communism. The Bible taught the dignity of labor concerning the merit of industry. It was a virtue to give aid to the poor: charity and almsgiving were a duty of Christians, which recognized the existence of “social inequality and the trusteeship of the rich” in the Ages. Christianity emphasized ethics and humanity in the personality of man with rights and duties, which was in accordance with the Roman law in contract requiring responsibilities of the agreed parties. “Agriculture was praised; manufacture did not please God; but trade could not be pleasing to the Deity. Material wealth was dangerous to spiritual welfare, though it was permissible to the laity if used for the good of their fellow men.” The price was absolute and independent, hence, exchanges were judged as just or unjust according to the equality of the absolute values; and usury was forbidden to churchmen. As time passed, the Church accommodated their earthly lives with in accordance with social changes: the coexistence of differences through compromises must be necessary for the economy.
Chapter IV. Economic Thought and Other Intellectual Developments

Fourth, Aristotelianism influenced Christianity in the formation of Scholasticism. Although early Christian brothers recommended common use of all possessions, common ownership of goods became impossible in reality by the change of human nature. In the fourth century, Augustine separated human rights from divine rights, and justified everybody to possess private property, which maxim was incorporated into the canon law. In the fifth century, as communist tenets became heretic, the church had acquired the right to levy tithes on land and personal industry, and accumulated wealth with large possessions. In the Middle Ages, austerity and asceticism had been virtues, while the wealthy were responsible to charity as the principal way to resolve the poverty problem. In the thirteenth century, as a result of increasing contact with Islam through the Crusades and translation of Arabic works into Latin with the rise of universities, Christianity was challenged by freethinkers: skeptics, materialists, pantheists, and atheists. The defense of Scholasticism against this challenge divided itself into two camps: the “mystic-Platonic” Franciscans rejected the principle of private property by pursuing the life of voluntary poverty, but the “intellectual-Aristotelian” Dominicans favored private ownership. The property of the religious institutions had been argued between owners and users.

The growth of medieval economic thought was slow according to environmental changes. The feudalism contained germs of capitalistic ideas, which slowly created another increment of capitalistic spirits and methods: as the feudal system declined, economic thought slowly moved toward capitalism. Churches and monasteries monopolized high education, and the rise of self-governing universities increased the number of students for higher education. The emergence of non-clerical intellectuals was evident in physicians and lawyers, artists and craftsmen, and the humanists. Non-clerical intellectuals were often opposed to the church as a political power, but their oppositions were easily turned into heresy. The growth of economic ideas was constrained by Christian morality and ethics as mentioned above; and bonds between politics and economy affected their economic ideas in wealth and prices. The urban ruling class composed primarily of proprietors living on income from their land, while rich merchants were influential in commercial and industrial cities. They consolidated wealth by investing part of profits in real estate. As town magistrates administered capital and labor, their political power was useful to accumulate more wealth through monopoly measures. The rich urban merchants or burghers, although varied by region, tried to merge with the landed aristocracy by marriage or other ways, making sticky bonds between them as well as politics and economy just like a politico-economic complex today.

The degree of economic freedom was influenced by the political development. Political autonomy depended on two factors whether the lord of a town was an ecclesiastic or a layman and the degree of effectiveness of the kings. The lay lords knew the potential advantage of the middle class for their own political power, so that they were less repressive than the bishops, who had conservative prejudices in relations with the merchant class. In the northern half of Italy, Milan revolted by 1057, and the first communal magistrates were founded at Lucca and Pisa in 1081, which institution spread to Italian towns in the twelfth century like Florence, Venice, and Genoa. In Germany, a revolt in the Worms in 1073 was a signal for a long struggle against their bishops, which spread to the ecclesiastical cities and ended with a compromise ensuring autonomy of the middle class in the fifteenth century; to which the monarchy was favorable. In the Low Countries, the institutions were half princely and half urban: in Flanders, judges were chosen by the local patrician class and nominated by the prince; and Liege towns and Brabant followed the same. In northern France, the main towns, almost all ecclesiastical cities, were revolutionary rural communes. The royal authority was sympathetic, but autonomy was not given to them. In England, the guild could ensure some autonomy to the town; and under Richard I, the boroughs were governed by a newly elected official, the mayor.
Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-1-1. The Landscape around Leeds Castle in England since the 13th Century

Map IV-1-1. A Medieval Manor
1. Private Property Rights and Wealth

It has been always doubtful whether private ownership of property is natural. Greek thinkers speculated about relations between the equality of human nature and the distribution of property. Plato considers two types of property. In the perfect state in his Republic, all property is privately owned by the ruled class; while farmers, artisans, and merchants produce all the wealth, but do not participate in politics. The ruling class, guardians, has no private property with any use of money; and they share a community of women and children. This kind of communistic order is the best way of relations connecting men to things in society. In the second best state in his Laws, Plato reiterates that communism is the best way to manage property. But the citizens form an aristocratic class monopolizing politics with the support of other members, and individually own an equal portion of land which is cultivated by privately-owned slaves. The state regulates inheritance to prevent increasing or decreasing of landholding; foreigners carried on trade, manufacture, and money-lending; which were forbidden to the citizens. Aristotle suggests that half of the land in the state is commonly owned by the citizens and worked by publicly-owned slaves, and the produce is used for the common meals. The remaining half is equally divided to the citizens, and worked by privately-owned slaves. But Aristotle rejects common possession of property and disproves the community of wives and children: property should be private, though in a certain sense common. In his Politics, Aristotle views that equality of private property is necessary to preserve the community against revolution, and suggests the limitation of inequality by regulating sales of land and inheritance as well as by preventing extreme poverty. Since some men are natural slaves to both Plato and Aristotle, the equality of property does not exist between two groups: civilized Greeks and savage barbarians, or citizens and non-citizens, or master and slave. Their equality was within the class, so there was no today’s equality.

In the society of Cicero and Seneca, slavery and unequal division of property was prevailed. However, Cicero asserted that all men were equal by the law of nature, and Seneca repeated this doctrine one hundred years later. His idea of the equality of men is against that of Plato and Aristotle who made the concept of natural slaves due to the difference between the civilized and the savage. Cicero says that the state should not interfere with private property because the state is principally founded to protect private property; and that private ownership is not established by nature, but property becomes private either through long occupancy or conquest or “by law, bargain, purchase, or allotment.” He wrote that “we ought in this to follow nature as our leader, to contribute to the common stock the things that benefit everyone together, and by the exchange of dutiful services, by giving and receiving expertise and effort and means, to bind fast the fellowship of men with each other.” Seneca views that in a primitive age, property was common and “used equally by all for the satisfaction of needs,” but avarice corrupted human nature, and the conventions established private property. He wrote that “avarice broke in upon a condition so happily ordained, and, but its eagerness to lay something away and to turn it to its own private use, made all things the property of others, and reduced itself from boundless wealth to straitened need.” He was a moralist focusing on the extravagantly rich. The Roman law defines that property is anything – material or immaterial, movable or immovable, and tangible or intangible – which involved “the right to use the object in question, to receive its fruits, and to dispose of it freely.” Lands and houses are immovable property that is wealth generating income, but animals and crops growing on lands are movable one; and a right of way is intangible. Some rights rule over someone: a master over a slave, a husband over a wife, and a lord over a serf. All things are commonly given to everyone by the law of God and of nature, but things are individually owned and unequally divided by human law such as law of nations, civil law, or common law.
Private Property and Communal Rights: “By the divine-natural law, all things were given to everyone in common; by human law, things were owned individually and divided unequally.” The Bible says the concept of private property: the Ten Commandments forbid theft: you shall not steal, which implies that the existence of private property. Matthew wrote that “If you would be perfect, go, sell what you possess and give to the poor and you will have treasure in heaven; and come, follow me” and “Jesus himself renounced everything and imposed poverty on himself, before he demanded it of his disciples.” The New Testament generally defines religious attitude toward wealth and property, without specific theory of property. The early Christian Fathers, influenced by the pagan philosophers and the lawyers, found a theory of property: inequality and private ownership. Men are equal by nature like in the Garden of Eden, but the conventional institutions destroy equality and freedom because human nature is corrupted by avarice and greed, resulting in the fall of man. Ambrose (died in 397) says “that by nature all property is common and that the Stoic had taught that all things were made for the common use of men.” Augustine (died in 430) considers property as “the conventional creation of the state and the fruit of sin” and believes that divine law indicates equality and sharing of the earth, but human law defines rights of property. He views that there are two types of possessions, temporal and eternal, and human beings are “in the stopping-places of this life as passing pilgrims, not as permanent possessions” that means that earthly institutions and possessions are merely useful to man’s life of sojourn. Thus, the early Christian Fathers generally views that “The institution of property represents both the fall of man from his primitive innocence, the greed and avarice which refused to recognize the common ownership of things, and also the method by which the blind greed of human nature may be controlled and regulated….This view is the opposite of that of Locke, that private property is an institution of natural law, and arises out of labor….Private property is therefore practically the creation of the state, and is defined, limited, and changed by the state.”

Isidore of Seville (died in 636) views that all property is common by nature, but some could be private. He says that such things as the settling of cities, war, slavery, and treatises between nations are part of the law of nations, and implies that the acquisition of property is part of the civil law. In his Decretum of 1140, Gratian views that by the law of nature everything is in common, but private property is introduced by human law, by convention and enactment. Since the natural law precedes the human law, whatever is accepted as written or customary law, if it is contrary to natural law, is considered to be “null and void.” Nevertheless, things are much complicated in the real world due to the difference of interest by groups such as priests, nobles, and commoners. The difference between divine-natural law and human law lies in conflict between spiritual and earthly worlds as well as between church and state: the kings and nobles run human law, while the clergy is generally in favor of divine-natural law. In his Summa Decretorum of 1158, Rufinus divides natural law into three parts: mandates, prohibitions, and demonstrations. The first two categories are based on Scripture, but demonstrations are “vaguer and more general.” Hence, “it is permissible for men to institute private property and slavery in spite of the demonstrations which recommend common ownership and equal liberty for all.” Therefore, “The law and customs which establish private ownership and slavery are certainly necessary to prevent crime and are, consequently, based on natural law, although they run counter to its demonstrations.” Both Alexander and Magnus rejected the clumsy notion of his demonstrations. Alexander of Hales (died in 1245), following the older Christian theorists, views that “the law of nature prescribes common ownership for men without sin, but private property for men after the Fall (of Man): the law does not change but its prescriptions vary with the circumstances.” Albertus Magnus (died in 1280) views that communal ownership is natural in a state of innocence, but the private property is the natural way in a state of sin, which is in line with the other Christian Fathers.
Chapter IV. Economic Thought and Other Intellectual Developments

Thomas Aquinas (dies in 1274) divides law into three: natural, human, and divine laws in his *Summa Theologica*. He defends private property by writing that “A thing is said to belong to the natural law in two ways. First, because nature inclines thereto: *e.g.*, that one should not do harm to another. Secondly, because nature did not bring with it the contrary. Thus we might say that for man to be naked is of the natural law, because nature did not give him clothes, but art invented them. In this sense, the *possession of all things in common and universal freedom* are said to be of the natural law, because, namely, the distinction of possessions and slavery were not brought in by nature, but devised by human reason for the benefit of human life. Accordingly, the law of nature was not changed in this respect, except by addition.” He distinguishes between natural law and law of nations by common or specific adaptability: if a piece of land belong to more than one man for a common or general purpose, the natural law is applied; but if the land is used by one man for a specific purpose like cultivation, the law of nations is applied. His idea lies in that common property is the ideal, but private property is natural and necessary either in the ideal or practical state in the sense of the Stoics and early fathers. Aquinas writes that two things are competent to man in respect of external things. First, it is lawful for man to possess property, because natural man has the power to procure and dispense them; and private property is more highly developed so more efficient than common one because of more careful management, a more orderly fashion, and a more peaceful state with less quarrels. Second, man possesses external things, “not as his own, but as common” so that he communicates with others in their need. A rich man does not act unlawfully “if he anticipates someone in taking possession of something which at first was common property, and gives others a share; but he sins if he excludes others un-...discriminately from using it.” Aquinas views that it is not theft if man takes secretly and uses another’s property “in case of extreme need” may be for his survival; and that a life of voluntary poverty fits to a life of perfection if one pursues asceticism.

*On Ecclesiastical Power* of 1301, Giles of Rome (see p. 457) views that private property is natural - the church has universal and superior lordship and the faithful have particular and inferior lordship – and it has been instituted by the social contract. His theory of social contract is insisted by that “there came to be possession of lands and fields, not only in accordance with such partition as occurs among the sons of one father, but also in accordance with sales, grants, transfers, and other methods which depend upon an agreement or consensus of minds....the laws added more things besides agreements, contracts, and compacts....he becomes the owner of that thing.” In these regards, the prince is limited to protecting the particular system of private rights. His theory was primarily useful in defending the property of the Church when Boniface VIII and Philip IV were disputing whether the king has the right to tax on the property of the French clergy. In *On Royal and Papal Power* of 1303, John of Paris (see p. 459) views that the property of the Church belongs to the ecclesiastical community, and the pope is a general administrator or a steward of the communal property. Since lay property is acquired by individual people "through their own skill, labor and diligence," individuals have right and power of lordship over their properties. The concept of labor in forming private property and capital was a brand new idea introduced by John of Paris. Hence, neither prince nor pope has the right of lordship or administration on such properties, and "prelates of the church have neither lordship nor juris...diction in temporal affairs by virtue of the powers granted to them.” In other words, since private property is acquired by individual labor, no other person than workers themselves has the right of property. In this regard, the pope has no jurisdiction in temporal affairs including matters of property. "Later thinkers denied that excommunications excluded men from secular society as well as from the Church. The clergy might threaten men with the torments of Hell, but they had no power to punish them and deprive them of secular rights in this world."

*Book II The Middle Ages from 750 to 1400* 539
William of Ockham, in his *Dialogue* of 1334, defended the Franciscan position on the doctrine of apostolic poverty, by attacking the errors of John XXII and supporting the emperor. First, in the state of innocence, there was no exclusive lordship by natural and divine law. “Have lordship over the fish of the sea and the birds of the air and over all living things that move upon the earth” and “Among them all things common.” Second, the first exclusive lordship of temporal things was introduced after the fall by human law, or by human ordinance or will; and this lordship is often spoken of in civil and canon law. Generally, lordship is a principal human power of laying claim to and defending some temporal thing in a human court; and prelates and ecclesiastics have lordship over church property but specifically as agents or stewards, not as owners of property. During the conflict between papalists and imperialists, William defended the claims of the king of England against the pope through his theory “that property is founded in human law and consequently falls under the jurisdiction of the secular power.” In *De Civili Dominio* of 1376, John Wycliffe (see p. 131), like in the theory of dominion, views that common ownership is natural, more perfect, and akin to the state of innocence; since the fall of man, private property has been introduced by human law and agreement: “When Adam delved and Eve span, who was then the gentleman?” At this point, he adopted the doctrine of his opponents such as Marsilius of Padua and William of Ockham. Wycliffe denied that the Church had any power in temporal affairs, and claimed that “the secular government should deprive unrighteous clergymen of their endowments.” He views that if the church misuses riches, temporal lords can take those riches away from them, since the life of poverty is most suitable for clergymen. Although his ideas were not new, his “virtues of common ownership” encouraged communistic revolts; his attacks on the misuse ecclesiastical wealth contributed to an idea for Reformation; and his defense of the royal power helped to form a new property system when the feudal society began to fall.

In sum, as discussed in philosophy, the concept of property was changed as follows. (a) Plato favored common ownership of property, but Aristotle rejected its common possession; and both pursued the equality of wealth among their citizens, but no equality existed between civilized Greeks and savage barbarians. Cicero asserted that all men were equal by the law of nature and private property should be protected by the state; and Seneca viewed that property was common in the primitive age, but avarice and greed corrupted human nature demanding private property. (b) Early Christian Fathers such as Ambrose and Augustine thought that all property is common by nature; but after the fall of man, human nature is corrupted so that common ownership of things was refused; and human law regulated and controlled private property. (c) Gratian views that everything is common by the law of nature, but private property is introduced in human law by convention and enactment; and any law, if contrary to natural law, should be null and void. Rufinus views that law and customs establish private ownership and slavery that is necessary to prevent crime, consequently, that is based on natural law. (d) Aquinas views that it is lawful for man to possess property because natural man has power to acquire them and because private property is more efficient than common one. If a man takes and use other’s property, it is not theft in case of extreme need. (e) Giles of Rome introduced the theory of social contract to be the property owner, which was primarily useful to defend the property of the Church. John of Paris introduced the revolutionary concept of labor into property: since private property is acquired by individual labor, no other person than workers themselves has the right of property; in this regard, the pope has no jurisdiction in temporal affairs. (f) William of Ockham argued that exclusive lordship of temporal things was introduced by human law after the Fall, and generally prelates and ecclesiastics have lordship over church property; but specifically, as agents or stewards, not as property owners. Wycliffe followed the theory of dominion, but allowed the secular government to confiscate the endowments if the clergymen or laypersons misuse riches.
Poverty and Solutions: There have been continuous conflicts between powerful riches and weak poors in history, which created social tensions though with different degrees. Around 400, urban poverty was serious as the poor flew into the large cities in the East, but were dispersed in the rural West. The legacy of late antiquity shows two types of poverty according to the primary cause of distress: “structural poverty” from institutional factors as a consequence of the social and economic organization; and “conjunctural poverty” from circumstantial factors such as the recurrence of plague, uprisings, pilgrimages, and wars. The peasant fell into misery from bad harvest due to bad weather, catastrophe, or pillage of his farm; the poor peasants fled to the cities to avoid taxes and other obligations; and many debtors easily became paupers. The poor was vulnerable to diseases because of malnutrition, bad hygiene, inadequate closing, and deplorable housing. Along with the sick and disabled, the prisoners of war, and widows and orphans; the poor became the rootless vagabonds. In society, physical and mental disability was a moral problem, while vagabondage and unemployment were political problems. The state authorities, churches, and monasteries provided some kinds of aid to the poor, but the resources were limited to resolve all problems of poverty in the medieval world. The Christians considered poverty as spiritual humility following the life of “the naked Christ” as part of asceticism or self-denial, and they tried to alleviate their social humiliation in charity. The rulers provided almsgiving to ensure the stability of the social order, and wanted to be a good king as an equitable judge and protector of the poor. However, almsgiving had no spiritual value without charity, though charity was a temporary measure to eliminate social inequalities. In the Early Middle Ages, when the poor family could not independently survive from external invasions, in the absence of money, they accepted dependence on a powerful lord for their protection by voluntarily signing on a contract between the landlord and the tenants as an agreement on rights and duties, which was the basis of medieval feudalism and serfdom as discussed in the Chapter II.

In the eleventh and twelfth centuries, though the economy began to revive, poverty existed continuously among nobles and commoners from “the shortage of arable land, climatic disasters, the ravages of war, and the excessive birth rate.” The hermit preachers, withdrawing from the world, attracted paupers and attempted to alleviate poverty and to restore human dignity of the poor; while the churches and monasteries spent a quarter of their revenues from tithes to help them. As the economy grew, laymen like merchants began to take the responsibility of charity upon themselves by giving directly to the poor, which established a more personal relationship between providers and recipients. They built small hospitals in cities or on roads where the poor were easily found, and charitable centers were established in the needed areas. It was believed that the rich man should give the excess beyond his needs, but the amount of alms was unable to define precisely; while the problem of theft was difficult to resolve. In the thirteenth century, the Dominican and the Franciscan orders reached out to the poor: a regular system of alms and of network of hospitals developed. In the fourteenth century, after the Black Death, the poor were benefited from the rising wages and rising bequests to hospitals and confraternities. As the working poor involved in violations and rebellions, attitudes toward the poor became harsh with fear and contempt. With the possibility of rebellion, mistrust came from fear of their possible actions: “stealing, setting fire to barns, raping women, killing animals and people, poisoning the wells, casting spells.” People believed that the poverty was harmful to the common good of the state; and the mendicant orders were criticized, and no one challenged that “poverty was an evil, a consequence of original sin.” As a result of economic change and humanism, medieval thinkers began to consider poverty and almsgiving as a problem of social justice: viewing that some people, who are unable to live by their labor income, deserve charity; many countries forced able-bodied paupers and vagabonds to work for their bread for themselves as well as society.
Chapter IV. Economic Thought and Other Intellectual Developments

Medieval writers considered some solutions for the problem. “The solutions were roughly threefold: some centered on the laws, suggesting either that God himself had authorized human law, the natural law could change according to circumstances, or that private possession was for the common good and was therefore according to natural law. Some centered on renunciation – either of the law or of private property. John of Paris and Fortescue by passed the legal conflict by suggesting that private property was the result of man’s own labor rather than a legal grant. Others renounce the ownership or dominion of private property, either retaining a limited use of it, or vesting dominion in God and then holding it in stewardship form him, often through the intermediary of pope or king as his earthly vicar. Finally, these was the English mean solution where property was held privately but was taxed by a constitutional monarch with the consent of his magnates for the common good. For Locke the problem of the unequal partage of things lay not in the inconsistency of the two laws, but in the tacit and voluntary consent of mankind to the use of money, which, being imperishable, allowing unlimited accumulation of wealth.”

(a) Changing Natural Law: One way to solve the conflict between two laws was to remove it altogether by altering, or at least adjusting, natural law to the changed circumstances of human life after the Fall. “It could then be brought into line with human law. Given that natural law was really divine-natural law, the law of God, attempting to change it was a daunting prospect, and both canonists and scholastics were cautious. But natural law was a flexible concept, which could be understood on different levels, from basic animal instinct to the sophisticated rules which made up the law of nations, international law…Medieval thought was tidier, but it did exploit the flexibility of natural law in trying to resolve its contradiction with human law.”

Rufinus was the most influential canonist at the University of Bologna, who wrote the Summa on Gratian’s Decretum before 1159. His definition of natural law was threefold: “The first two categories were based on Scripture: commands which ordered the performance of good acts; and prohibitions which forbade the performance of bad ones. The third, known as demonstrations, was vaguer and more general, and included advice like that let’s all goods be held in common.” The third shows the most potential for change. “With the Fall, human understanding of natural law, that is, of good and evil, had become clouded, but it had been restored through the commands and prohibitions of the Bible, which laid down principles of right and wrong. But these needed to be adorned or supplemented by custom. They needed to be applied in specific situations. This was especially true of the liberty of all men and the common possession of things, for now, by civil law, this is my slave that is your field. As Rufinus explained…they were necessary to restrain people and to prevent crime. They were a way of disciplining fallen humanity into following the commands and prohibitions of natural law, and so were not contrary to it. This more flexible approach, governed by altered circumstances, would be followed later.”

Alexander of Hales (d. 1245) suggested that the application of natural law should be flexible, although this did nothing to change its content. Although natural law decreed community of property for his heavenly innocent state of nature, it allowed private property in his fallen and diseased state. Thomas Aquinas suggested that all laws including natural law and human law, if it derived from right reason, was derived from the eternal law of God. If something followed right reason, it meant that it was for the common good, and anything for the common good therefore agreed with natural law. He admitted that natural law could be changed in two ways, either by additions to it or subtractions from it; the individual holding of possessions is not contrary to the natural law.” John Fortescue (1394-1476), an English lawyer, expressed that natural law needs to adapt to circumstances by saying that the first principles of natural law do not change, any more than the sun or the wind, but its effect in changed circumstances does. In theory at least the contradiction between natural and human law should have been solved.
(b) **The Monastic Solution** (Imitating Jerusalem): Giles of Rome (died 1316) recognized that things being as they were, it was to the advantage of a city for the citizens to delight in private possessions. “Since men were far from perfect, they were content to live such a life. Those who decided to live without worldly possessions chose to live not as men but above men, living a Heavenly life. Such people, being so much better than other were not part of the State. Nevertheless, for those who would be perfect, imitation of the apparently communal life of the first Christians at Jerusalem seemed to be the answer, despite the fact that the interpretation of the relevant biblical texts is disputed: community of property may not actually have been the rule of Jerusalem. Gratian preserved a text, dubiously ascribed to Clement I, which recommended communal living for all who wanted to serve God and to imitate the apostolic life. The use of everything in the world ought to be common to all men. Clement recommended. It was only through sin that individual possession, and the resulting conflict, had arisen. Just as the air cannot be divided nor the splendor of the sun, so the things given to all men in common should not be divided, he advised. Council of perfection indeed, and it was followed, with varying degrees of success, by the monastic orders based on the Rule of St. Benedict. In his Rule, the saint ordered: Let no one presume to give or receive anything without the abbot’s leave, or to have anything as his own...for monks should not have been their bodies and wills at their own disposal; and he followed this with a reference to the Jerusalem community.” The monasteries were successful until the twelfth century, but they were becoming rich by owning large properties. The reactions against materialism were channeled to the Benedictine monasticism, which brought the reform ideas of the Church with the rise of other orders. Some radical groups of anti-orders such as the Cathars or the Waldensians challenged the corruption of the Church. Particularly, the Franciscans called for earthly church to return to the simplicity and poverty.”

(c) **The Mendicant Solution** (Total Poverty): The mendicant people to renounce all property, both individually and corporately. St. Francis was a son of wealthy merchant, but chose the life of the poverty of the Apostles. “In the rule of 1223, he ordered his followers to renounce all property: The friars are to appropriate nothing for themselves, neither a house, nor a place, nor anything else. As strangers and pilgrims in this world, who serve God in poverty and humility, they should beg alms trustingly. Above all, the Franciscans were to shun money. Brother who worked were not to seek reward in coins or any substitute for coins...They were not so much as to touch money: If ever we find money somewhere, we should think no more of it than of the dust we trample under our feet. The saint wanted his friars to be completely divorced from the commercial world of his childhood. Material life would deprive them of the love of Christ and of eternity and would drag them down with it to Hell.” Without funds, it was difficult for the Order to survive as the world-wide preaching organization, so that the Second Rule was drawn by the Cardinal-Protector Ugolino. It introduced an intermediary, a financial agent or spiritual friend, who would stand between the friars and the world in order to provide clothes for the brethren and necessities for the sick. Innocent IV in 1245 allowed the Franciscans to retain the use of their property, although the papacy owned it. “In 1322 Pope John XXII renounced papal ownership of Franciscan property, and the next year declared it heresy to say that Christ and the Apostles had owned nothing. He also beautified the Dominican Thomas Aquinas, whose moderate views on property had influence him.” Richard Fitzralph (1295-1360), Archbishop of Armagh, wrote against the mendicant order and opposed its poverty doctrine. John Wycliffe condemned the abuse and corruption of the Church, and demanded clerical poverty and the disendowment of the Church – total renunciation of property: Christ intended his Apostles to have no property, and any church or priest that owns any property is violating the commands of the Lord. He opposed to that the papal authorities to collect money from English parishes for the French pope.
(d) **The Stewardship Solution** (The Pope as Steward): The Franciscans opposed to common and private rights of property: the earth and its resources were perpetually owned by God, and Christians were merely stewards of it on God’s behalf. “The origins of the idea lie in the Old Testament conception of economic activity. The people of Israel administered the earth on behalf of the Lord. They belonged to him, and everything they had was his. The Lord God took the man and put him into the garden to dress it and care for it. God’s plan was that man should be the agent of economic growth. Under God, man was given dominion over the earth and encouraged to increase: ‘Be fruitful and multiply, and replenish the earth and subdue it. Man’s dominion over the earth was similar to that of God over man. With the fall, however, nature as well as man was changed, becoming less productive and less attractive: ‘Thorns also and thistles shall it [the earth] bring forth to thee; and thou shalt eat the herb of the field; In the sweat of thy face shalt thou eat bread…’ Scarcity had entered the world, acting as a catalyst to economic development. Adam was sent from the Garden of Eden to till the ground, and he and his descendants became farmers and shepherds. The accursed Cain his progeny, unable to till the earth, diversified their economic activity, building cities, becoming herdsmen and manufacturers. The New Testament concentrated more on the kingdom which is not of this world, but even here the idea of stewardship was perpetuated in the parable of the talents. God retained lordship of property, but for practical purposes Christians administered it, or had the use of it. It belong to the whole Christian society, the Church. All Christians were baptized into the Church; they became united within the mystical body of Christ. They were, in terms of Roman law, part of a legal corporation. And one of the hallmarks of a corporation was that it could own property…This meant that for practical purposes, the pope had dominion of the property of the Church on behalf of Christ.”

11 John of Paris (1255-1306) ascribed dominion of church property to the pope, and of secular property to the lay ruler.

The Solution of John Wycliffe (1320-84): He thought that private property and other human institutions were the result of the Fall of man, introduced as a remedy for sin, and that they were contrary to man’s ideal nature. “Unlike Augustine, he considered that kings existed before priests. Property had developed with kingship and was therefore part of secular lordship, which meant priests had no right to it: Christ’s condemnations of riches, coupled with the exemplary communal life of the earthly Christians amply demonstrated that. Any property that priests, or indeed laymen, held was the result of a royal grant, and was held from the king, on condition that it would be used for the good of the realm, and on the understanding that the grant was revocable. The problem of revoking the grant to the priests was an urgent one in the late fourteenth century. England was at war with France, and clerical wealth was clearly not being used for the good of the realm. Wycliffe castigated the greedy and avaricious clergy for preying on the wealth of England during the national emergency. They were the worms in the stomach of the body politic, which would ruin its health. If they would not voluntarily renounce their wealth, and return to their former state of apostle poverty, then the king, as the vicar of God, would have to confiscate it for the common good. Disendowment of the English Church was discussed at the Parliament of 1371, and reported on by Wycliffe.” His followers, known as the Lollards, had absorbed his idea that Christ had dominion over property and that priests had no right to temporal possessions beyond what was needed for substance. Around 1410, a comprehensive bill of the English Parliament forced the disendowment of the Church, and the reallocation of its resources to the laity, from the king down to the beggars. “The theory of dominion used by ecclesiastical writers, whether in support of the papacy, like Giles of Rome, or the king, like Wycliffe, was ultimately dependent upon the lordship of God: Pope or king administered God’s property as stewards, and Christian subjects held property from the steward. Since no one had strictly private rights to dominion over property, the conflict between divine-natural and human law simply did not arise.”

12
Chapter IV. Economic Thought and Other Intellectual Developments

(e) A Secular Solution: In England, the Norman Conquest resulted in a radical redistribution of land to William’s followers, who also occupied it conditionally and not in full ownership under a system known feudal tenure. The main division of the peasant tenants of the manor was into free and servile known as villeins. The free tenants held their land in return for fixed charges and minimal services. They owned their goods and their labor and they had freedom of movement. Based on English common law, “no action could be brought against a free tenant by his lord in connection with the tenement unless the lord had a writ from the king or his justice.” The effects on the concept of private ownership were profound. “The law came to recognize that the tenant who had the immediate possession and use of land had dominion of use, as opposed to the ultimate and often distant dominion of the lord. Such a situation reflected the division of dominium arrived at by the Roman jurists in the thirteenth century – dominium idrectum, the lord’s ultimate legal ownership of the land, and dominium utilis, the dominion of use of the tenant, which involved the right to sue, have, and enjoy. The lord’s dominion was in practice reduced to not more than an economic right to exact dues. The tenant had become virtually a private owner; land in effect became freehold, and therefore saleable, and could be willed to heirs.” The villeins’ position also changed slowly. “In addition to the commutation of labor services for money payments, a peasant land-market developed from the thirteenth century, which enabled villeins to buy and sell with the license of the manorial court.” The economic change and social mobility of the fourteenth and fifteenth centuries led to a change in the concept of villeinage: manorial tenants were increasingly given protection by copyhold tenure, which admitted them to the tenement. Therefore, from the reign of Henry II, the problem between divine-natural and human law was resolved at least in England, by the development of private property ownership.13

(f) Taxation: In the gradual transition from a society dominated by feudal tenure to a national sovereign state ruled by king and Parliament, the customary feudal dues were gradually replaced by national levies. “The theory of taxation emerged in England in association with the idea of the community of the realm and the way in which this was represented. A sovereign ruler was thought to be the physical embodiment, or representative, of an abstract legal body, in this case the community of the realm, and to be totally identified with its interests…A distinction existed between the ordinary revenues of a ruler and the extraordinary ones, which in theory were raised only in an emergency…The raising of extraordinary revenue was justified in an emergency situation where customary payments were not sufficient.” Magna Carta is agreed by King John of England in 1215: “it promised the protection of church rights, protection for the barons from illegal imprisonment, access to swift justice, and limitations on feudal payments to the Crown, to be implemented through a council of 25 barons.” Taxation needed to be for the good of the whole community and to be paid by all freemen. As it touched the property rights of all freemen, the king had to seek consent for the necessity. “The consent given by a representative gathering was binding, even on those who disagreed or who had not been present. It was given not to the raising of the tax, but to the admission that a case of necessity justifying an emergency levy existed. Once this was established consent to the levy could not be refused, although bargaining about the amount set against redress of grievance might take place. Consent had become a formality.” In France, the right of consultation had also developed, but here it concentrated not so much on the existence of an emergency situation. But in the Anglo-French war, for Edward III, “By placing consent to taxation within the framework of his balanced political and royal constitution of king and Parliament, he was providing an answer to the conflict of the two laws on property, for private property was taxed for the common good. He was looking backwards to Aristotle who had not only favored a mean or mixed constitution, but had also considered that the better system is that under which property is privately owned but is put to common use.”14
**Attitudes to Poverty and Wealth:** The attitude to poverty changed from positive to negative by environmental changes.\(^{15}\) The positive position was that God made human being strong or weak, wise or foolish, and rich or poor; and the poor needed help from the rich: “inequality and reciprocity were part of the divine plan” and reciprocity was linked to charity. In the twelfth and thirteenth centuries, the Christian preachers identified the poor with Christ, and both Dominicans and Franciscans viewed that the poor were with virtuous and the rich with the evil. It is generally thought that wealth came from two ways: one was inherited from the father “who took it from others and stole it by usury,” and the other was obtained by oneself doing the same as his father. The term of “the righteous poor” and “the cruel rich” were used without any disturbance; and the origins of this idea can be considered by three sources. First, all property was common by nature, but corrupt human being began to possess private property which created inequality in society. Considering that Christ and his disciples had no property, poverty was sacred. Second, in the medieval society, there had been structural poverty from heavy tax burdens and other obligations as well as conjunctural poverty particularly after famine, diseases, and wars. As diligent peasants lived at a subsistent level or became poor, and profit-taking in commerce was very limited or prohibited; the accumulation of wealth was negatively considered. Third, in addition to the favorable position of the poor in the Scripture, the poor was necessary for the salvation of the rich by joining charitable activities. If there was no poor people, there would be no salvation. On the other hand, the negative position was that poverty was an evil so that the poor citizens should work for the good of the city. “Those who are lazy and indolent in a way that does harm to the city, and who can offer no just reason for their condition, should either be forced to work or be expelled from the commune. The city would thus rid itself of that harmful part of the poorest class.” The fundamental problem lay in whether there were available jobs with minimum wages allowing a subsistent level of survival in the economy – availability of working positions.\(^{16}\)

The attitude to wealth also changed from negative to neutral to positive. The Bible was hostile to the rich by viewing that wealth is an obstacle to their salvation, as shown in the camel and the eye of the needle, but some writers viewed that the rich and wealth were not necessarily a bar to salvation. Ambrose thought that money was not only a source a temptation to the wicked but that of an incentive of virtue; similarly the attitude of Augustine toward wealth was neutral; and Bernard viewed that gold and silver themselves were neither good nor bad: “yet the use of them is good, the abuse is bad; anxiety about them is worse; the greed of gain still more disgraceful.” In the thirteenth century, the rise of commercial revolution with the use of money changed the attitude: the pursuit of the good or virtue required a mean of self-sufficiency. Albert viewed that excessive wealth as well as excessive poverty might disturb the good life because the excess could destroy the harmony and competence of “necessary personal faculties.” Aquinas agreed with that riches are good if they serve the use of virtue, but bad if they hinder the practice of virtue. In fact, the idea that the excessiveness is bad came from “the virtue of moderation” of both Plato and Aristotle: extreme inequality of income and wealth destroyed the middle class and induced mass uprisings and revolution as experienced in ancient Greece. Views and attitudes toward wealth became more practical when humanitarian ideals became prosperous in the Italian cities. Leonardo Bruni observed that “As health is the goal of medicine, so riches are the goal of the household” because riches are useful to satisfy their needs as well as to help others. During the period of the Renaissance and the Reformation, both humanists and reformists thought that wealth was acquired by individual diligence and hard work with avoiding of worldly pleasure and idleness, which idea contributed to the rise of capitalism later. The concept of human labor into the formation of private property was originally introduced by John of Paris, but which idea was similarly applied to the formation of wealth in the coming centuries.\(^{17}\)
Chapter IV. Economic Thought and Other Intellectual Developments

2. Money, Trade, Just Price and Just Wage

In the Roman world, Roman citizenship, landed property, and service in the army must be essential factors which were interconnected towards politics, economy, and society. Dionysius (c. 60 B.C. – after 7 B.C.) observes that “wealth is reward for war; it is to preserve this wealth that they are prepared to face such hardship and danger. It is therefore only right that the rich man should be exposed to greater risk. By the same yard stick, it is also right that the poor man should not fear loss, and should not only be exempt from taxes because he is poor, but also exempt from military service because he does not pay taxes…In essence Dionysius acknowledges that the task of producing as well as defending wealth ought to be left in the hands of those who already possess it, because it is in their interests alone to do so. His conclusion is a political one, but not without economic implications…Political power was awarded to the rich as compensation for these burdens, and the plebs, at first, did not even notice…Most certainly of fundamental importance is the familiar argument concerning the geometrical and proportional equality which relates this kind of political economic structure to distributive justice. Indeed the proportional distribution associated with the type of justice was never, in the classical world, the work of a single person…”

In general, a citizen was qualified both by land ownership and by his service in the army, so that the proletariat was exempted from military service. “The idea that those who fought in the army should also possess land seemed only natural. With this point of view, on the other hand, could well be associated the theory of Greek origin which tended to regard the poor as a potential threat to the social order, inasmuch as they had no property to defend.” Cicero was opposed to egalitarian tendencies in viewing that “since harming another person to one’s own advantage goes against nature, against the good of the community and against justice, it is evident that such an action is to be avoided; it is up to the state to protect the individual’s property.”

In the ninth and tenth century, Vikings, Magyars, and Muslims invaded the European states, which decentralized their political system, and stimulated the rise of feudalism and monasticism. From the eleventh century to the first decade of the fourteenth century, Europe experienced a period of economic expansion that was characterized by “the rapid growth of trade, markets, and towns, the acceleration of agricultural and craft production, large increases in the minting and circulations of coins, and the development of commercial enterprises and techniques, that was so-called commercial revolution. Joel Kaye writes that “If theologians, chroniclers, and poets agree that commerce and industry is essential to the welfare of their communities, then the bourgeois order that binds the realm through exchange, and the search for profit that animates the bourgeois order, and the monetary and market consciousness that informs the search for profit, are as beneficial as they are dangerous.” Odd Longholm views the medieval schoolmen with a wide range of thought - wealth and private property; alms, exchange, and the idea of justice; the role of the market; labor and the law of cost; money and moneylending; and uses and abuses of money. He describes that “The feudal system was breaking down. Monetary commerce gradually replaced the barter economy locally. Long distance trade was revived following the crusades. Large markets appeared as trading points. Improved agricultural methods permitted a population increase which soon found expression in the growth of towns, with a new commercial class as a dominant element.” This is the first period in European history “with some justification, to possess an idea of economics as a particular set of relations.” As discussed in Chapter II, the commercial revolution requires a proper development of market conditions including finance and banking, while the medieval attitudes towards commerce and wealth had been negative because of traditional values and biblical ethics. This subsection deals with medieval thought of money; weight, measures, and coinage; the mercantile system; and the just price and the just wage.
Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-2-1. Medieval Coin
http://etc.usf.edu/clipart/45000/45058/45058_med_coin_lg.gif, accessed 30 September 2015

Photo IV-2-2. Just Price in the Middle Ages
Thought of Money: The basic function of money is to facilitate the exchange of goods and services; and its specific functions are medium of exchange, unit of account, and store of value. The Mesopotamians used money as early as 3000 B.C. and “the tokens were tiny models of commodities: cloth, honey, bread, oil, sheep, goats, beer, milk, and even more abstract things such as days of work.” In ancient times, precious metals in weighed quantities were a common form of money and one of the Greek coins was the silver obol: “In the Attic standard of weights and coinage six silver obols were worth one silver drachma. It is interesting to note that before the development of coinage six of the pointed spits or elongated nails used as tool currency constituted a customary handful similar to that of the even earlier grain-based methods. Therefore one of the early Greek coins, the obol, was simply a continuation of a primitive form of money - the iron spit or pointed rod.” Roman emperors made more extensive use of coins for money as well as for propaganda. European states had used coin as currency until paper money emerged by the end of the seventeenth century. They could pay taxes and rents as well as pay to the Church for their sins; and all transactions required money when it is available. As coins were used widely, there were problems in two ways: one was in management of money and the other was in money itself.

First, in managing money, there had been danger of theft or robbery in storage or transporting, costs of transporting of coins, and absence of interest or any other return on the money. The merchants, money lenders, and goldsmiths wanted safe storage, shipment, and payment of coins to designated recipients. One type of payment methods was that the bank issued a receipt as an evidence of deposit, which was a bank note that was simply a bank debt or promise to pay. The other type of payment methods was that the bank issued a deposit credit, which evidenced the entry of money on the bank’s books, so that the depositor can write a payment order on the bank to the recipient like “Pay such amount to a certain person and charge to my bank account.” At this point, the income of the emerging bankers came, not from interest, but from charges for safekeeping and for transmitting payments. However, depositors are not all going to demand payment at any one time or even over a short period, so that the bankers need only a small fraction of total deposit amount – perhaps only a tenth of that. In this regard, the idea of fractional reserve banking was born by lending out some of the total deposit with earning some interest. “If you want currency that is convenient to hold or transport, I will provide you with bank notes. If you want the convenience of checking facilities, I will provide those too.” Banks began to pay interest on deposit balances, which was the beginning of modern banking.

Second, in money itself, there had been problems of debasement and alteration of coin in form, bimetallic ratio, denomination, weight, and material. Money should have the properties of a small size from which subtraction is not possible, the stamp of some prince who authorizes the validity, due weight for the fixed price, long endurance without corruption, and precious metals like gold and silver for its value. In 1226 Louis VI of France declared that “his own money was to be current over the whole of France, whereas feudal money was restricted to its place of origin.” The French Crown began to buy some of feudal coinages in 1319, and completed the purchase by the mid-fourteenth century. In England, the community owned the money in circulation, and the Parliament required its approval for any alteration of money. When there were reductions of money in weight during 1335-44, the Parliament compelled the King to restore the coinage and never to alter its weight or fitness again in 1344. The prince’s gain from alterations is the loss of community, that is unjust and unnatural because money is designed for the medium of exchange: the wealth of the community should not be stolen to the prince by a trick without consensus of the people. The alteration of money caused that silver money drives out gold money to foreign counties, which is Gresham’s law. Money of account, silver famine, and new copper coins of the late Middle Ages are well explained in the Chapter II (see p. 305 to 308).
Chapter IV. Economic Thought and Other Intellectual Developments

Henry of Friemar (died 1340) wrote a list of essential monetary properties as follows. “The first is that it be of very small size, so that subtraction cannot be made for it without easy detection, which would not be the case if it were of large size and ample form. The second is that it be impressed with the stamp of some prince, for otherwise anybody might fabricate and falsify money, by which equality in exchange should be done away with. The third is that it be of due weight, for otherwise a fixed price cannot be put on commodities by means of it. The fourth is that it endure long without corruption, for otherwise future demand cannot be provided for by means of it…The fifth is that it be of a precious material, like gold or silver, so that a price can be put on goods easily and promptly according to its value. This list provides a convenient summary of the nature and functions of money as a medium of exchange, as an equalizer in transactions, as a store of value, and as a commodity with a value of its own.”

Nicole Oresme (1323-82), born in Normandy and studied in Paris, and received a degree of the master of arts in 1342. He continued his studies in theology and obtained a doctorate degree at the University of Paris in 1356, became grand master of the College of Navarre. Since then, he was a lifelong friend and consultant for Charles V of France. In 1362, Oresme became master of theology and was appointed to canon of Cathedral of Rouen; while he regularly taught at the University of Paris; and he attained the post of the bishop of Lisieux in 1377. He was known as an economist, mathematician, physicist, and philosopher. Among others, he wrote Commentary on Ethics of Aristotle in 1370 and Commentary on Politics and Economics of Aristotle in 1371, and Treatise on Coins in both Latin and French.

Henry Spiegel analyzes Oresme’s Treatise in his The Growth of Economic Thought.

In appraising government policies, he views that money was invented and regulated for common utility in exchange of goods and services for the community. Oresme considers five different types of alteration of coin: form, bimetallic ratio, denomination, weight, and material; but he does not allow any alteration of coin. “Changing the name of a penny and calling it two-pence would make it necessary for goods to be bought or priced at proportionately high rates, while the real value of pensions and rents fixed in money would decline. Changes in weight are an outright fraud. To prevent changes in material, a sample of a standard coin should be preserved by the public authorities.” It is viewed that alteration or debasement of money gives profit to princes at the cost of people in the community that owns money, which is unjust; and it is also unnatural because money is designed to serve as a medium of exchange which should not derive any profit. Moreover, debasement is basically against the will of citizens and worse than usury because it is close to robbery and extortion against the will of citizens; changes in weight are a fraud; and the public authorities should preserve a sample of a standard coin to watch changes of material. Oresme introduced the concept of Grasham’s law two centuries before him.

Henry Spiegel explains two cases of debasement in Oresme: by the consensus of the people and as an emergency tax for the state. In the first, under a bimetallic standard, Oresme allows a change of the mint ratio in response to a substantial change of the market ratio. But to keep such alteration within proper bounds and prevent its exploitation by the prince, “the community alone has the right to decide if, when, how, and to what extent this ration may be altered, and the prince may not in any way usurp it.” In the second, according to Oresme, debasement is permissible due to an emergency situation when a large amount of bullion has to be transferred abroad such as in war or as the prince’s ransom. “In such a situation the community may rob itself and debase its coin, an action that then has all the characteristics of a good tax.” Regarding the distribution of wealth, Oresme explains that “generally, equality of possessions or power in all sections of the community is inconvenient and inconsistent, but too great a disparity destroys and spoils the harmony of the state.” Oresme not only opposed debasement but also was against magic and astrology of the time by favoring the reasonable way of thinking.
Chapter IV. Economic Thought and Other Intellectual Developments

Weight-Measure-Coinage: Since money and banking in the Middle Ages was discussed in Chapter II, the focus here is limited to the progress of economic thought on the standards of measurement. As origins of the standard, “The earliest known uniform systems of weights and measures seem all to have been created at some time in the 4th and 3rd millennia BC among the ancient peoples of Egypt, Mesopotamia and the Indus Valley, and perhaps also Elam (in Iran) as well. Early Babylonian and Egyptian records and the Hebrew Bible indicate that length was first measured with the forearm, hand, or finger and that time was measured by the periods of the sun, moon, and other heavenly bodies. When it was necessary to compare the capacities of containers such as gourds or clay or metal vessels, they were filled with plant seeds which were then counted to measure the volumes. When means for weighing were invented, seeds and stones served as standards."  The idea of the measure or standard in Greek thought was inseparable from the concept of the mean, or moderation, and also that of justice. Plato says that all specific essences are unified under one specific generic essence, which means that the standard of all things is a kind of universals measuring individual species. The Greeks assigned the creation of weight to God. The Bible also writes that “A just weight and balance are the Lord’s; all the weight of bag are his work”; and that “With what judgment ye judge, ye shall be judged; and with what measure ye mete, it shall be measured to you again.” The whole concept of weighing and measuring was fundamental in Christian faith and morality, and was closely associated with the Day of Judgment and the salvation of the soul. “The idea that control over standards was divine was reflected in Athens, where the standard weights and measures were dedicated to the gods by being kept on the Acropolis. In Rome they were kept on the Capitoline Hill, in Jerusalem they were placed in the Temple, and in Constantinople, the Emperor Justinian had them kept in the Basilica of Hagia Sophia.” The term money (moneta) came from the goddess Juno Moenta. 25

In the early fourteenth century, Giles of Rome linked papal sovereignty directly with divine power over weight and measure and number, based on the interpretation of Solomon’s words: “You have ordered all things in measure and number and weight.” Roman law had decreed that the emperor controlled the coinage, which was recognized by Christ in his advice to “Render to Caesar the things which are Caesar’s…During the early medieval period, the standardization of weights and measures, the reform and standardization of coinage, and the control of trade often coincided with the establishment of effective sovereign power. One of the best examples is Charles the Great, the Emperor Charlemagne. He tried to standardize weights and measures. He also introduced far-reaching reforms of the coinage, and he controlled trade strictly, to the extent that he made a trade treaty with the powerful Anglo-Saxon King Offa of Mercia (d. 796), and later imposed the first trade embargo on England.” In England, Alfred the Great of Wessex (871-99) defended the Anglo-Saxons against the Vikings, and ruled all England not subjected to the Danes, kept a strict control over the coinage, and made astute use of the process of demonetization by calling in existing coins and introducing new coins. He actively encouraged trade, especially in the south-west; and his grandson Athelstan (924-7) created a good quality of silver coinage which was uniform and abundant. 26 “Edgar the Peaceable (959-75) …undertook a major reform of the coinage, so significant that it has been compared with decimalization. After that the coinage was reissued and the types changed every six years. Edgar specially linked the standards of coinage and measurement when he laid down that one coinage is to be current throughout all the king’s dominions, and no man is to refuse it; and the system of measurement as is observed in Winchester. At the Norman Conquest, William took over the Winchester standards of weight and measures, decreeing that they should be uniform throughout the realm and stamped with his seal to authenticate them. They were then moved to London, where they were kept in Edward the Confessor’s Crypt Chapel of Westminster abbey to symbolize the continuity of sovereignty.” 27
In metrological standards, “The most obvious standard mark was the hall-mark applied to silver ware. In 1300 a statute of Edward I ordered that no sliver were was to leave the maker before it had been assayed by the warden of the London goldsmiths’ guild and marked with the leopard’s head as proof of its quality. Other towns were to observe the London rules.”

In policing the standards, the power of the monarch over weights and measures was absolute. “Imposing these standards at local level was a different matter. Richard I recognized this in his Assize of Measures in 1197, which made certain people in each city and borough responsible for enforcing and authenticating the standards. Enforcement was difficult. In rural areas such responsibilities were an essential part of lordship. Usually they would be granted by the king with the land and handed on in subsequent grants. At the local level, such control could cause considerable resentment, for it could be seen by the lower orders as yet one more instrument of oligarchic or seigneurial oppression. The appearance of the lord’s surveyor with his measuring rod was an occasion of fear and apprehension. Not only did he use the lord’s measure, which might be smaller than the customary measure, but his visit might mean that a peasant had tilled over a neighbor’s boundary, or, far worse, it might be the prelude to the enclosure of the land and eviction of the tenant. On some manors, the scales were a manorial monopoly, and the peasant would have to pay to use them. In the towns, too, during the fairs, tradesmen might be forced to use the municipal scales, or to rent them, for which they would be charged…Complications could arise in both country and town where lordship was divided. It could happen that in one village different measures might be used for the payment of tithe, purchases in the market, and the payment of manorial dues…Often the demarcation line between urban and rural jurisdiction was unclear, especially where a borough had been carved out of a manor by its lord. The problem of policing standards in towns, as centers of trade, was both harder and more necessary. Policing involved…inspection, verification, and enforcement, which included judgment and punishment.”

Control of the coinage was a royal prerogative. When the control of metrological standards became decentralized, control of the coinage became more centralized. “Accordingly, the complaint about Brother Salomon was laid directly before the King’s council, rather than the Archbishop’s court, and the King himself ordered an inquiry. Offences against standards of the coinage, such as clipping or counterfeiting, were habitually dealt with in the kings’ court rather than at borough level…The minting of money was also gradually centralized.” In the economy, the state of the coinage and the quantity of its circulation profoundly influenced prices of essential goods and service in the market, which could lead to inflation or deflation. Alteration of coinage can be done by two ways: the change of the ratio of precious and base metal, and the reduction of the weight of coins. The alterations of the coinage affected the economy significantly. The most obvious effect of debasement or devaluation would be an inflation, which would hit everyone in society – fixed income earners, particularly the poor. “The French clergy seem to have taken on board the idea that money belonged to the community. Starting in 1303-4 they tried to persuade the King to seek the consent of bishops and magnates to alterations in the coinage. In the 1320s and 1330s Philip VI Valois went through the notions of consultation, but the opening of the Hundred Years War soon showed how little store he set by it, as the large seigniorial profits indicated. Then, early in 1347, at a critical stage in the war, Philip VI issued an ordinance declaring that the making, the provision, and total control of money pertained solely to us and our royal majesty…as it pleases us, and as it seems goo to us for the good and profit of us, or our kingdom, and our subjects, and the exercise of our right…In England, unlike France, the principle that the community owned the money in circulation, and that the approval of Parliament was necessary for any alterations to it was more firmly established than in France. Parliament strictly curtailed the king’s sovereign rights over the coinage, which ensured that alterations.”
The Mercantile System: The ideas on trade and merchants inherited from classical and biblical sources, that was a mixed, if not contradictory, one. Plato disapproved retail trade, and allowed foreign merchant to take a role in his city-state, because they contributed to the even and proportionate diffusion of commodities. Aristotle regarded retail trade which involved the making of a profit as unnatural, in contrast to barter. He therefore banned merchants from his ideal State. “A contemporary even suggested giving free seats at festival to merchants and ship-owners as a mark of respect, in the hope that more trade would be attracted to Athens, thus generating customs revenue.” The early medieval writers were in line with Christ’s expulsion of the buyers and sellers from the Temple: sin always wedged itself between buying and selling, and merchants were invariable sinners. In the Gratian’s Decretum, there was “a famous warning to penitents from Pope Leo the Great (440-61) to avoid the dangerous business of trade because it was virtually impossible to avoid sin when buying and selling.” Trade was traditionally considered as money-making at the cost of others, so commercial activities were handled by either foreigners or liberated salves in ancient Greece and the Roman Empire. As the negative attitude toward commerce remained unchanged, a great number of merchants were Syrians, Jews, Armenians, or Greeks. Since buying and selling are always polluted with immoderate striving for money, a merchant shall hardly keep himself from doing wrong, which means that Christians should not be involved in trade. Gratian condemned the practice of “buying cheap and selling dear” as shameful gain. When the craftsmen produced something out of the raw materials, if they charged more than material costs and labor, the trade was considered immoral and shameful. However, scholastic authors in the thirteenth century were mainly concerned about the justification of commerce and commercial profits. As the motives of profit in trade became recognized only in self-support, charity, or public service; negative attitudes toward trade was changed by economic nationalism and economic humanism in the fourteenth and fifteenth centuries.31

“Augustine had laid the foundations for change by allowing a merchant to speak for himself. He justified his occupation because he carried goods over long distances, which entitled him to earn his living…Several important ideas emerge – risk and labor as titles to profit, justification of buying cheap to sell dear on the basis of a right intention, and the usefulness of the merchant to the realm. The gradual transformation of attitudes I illustrated by papal view. In the year 1078 a council at Rome had condemned merchants by stating that it was impossible for either merchants or soldiers to pursue their trades without sinning, and denied them the hope of eternal salvation unless they could find other work. Yet in 1199 Pope Innocent III canonized the merchant Homo-bonus of Cremona within two years of his death.” Two Englishmen, Thomas, rector of Chobham, and Alexander of Hales justified mercantile activities: “Both touched on issues raised by Aelfric. In his great Summa for confessors, completed about 1216, Thomas allowed laymen to buy things cheap and sell them dear without alteration or improvement, because they were redistributing goods from areas of plenty to those of scarcity. Like the canonists, he allowed merchants to recover their original outlay, and to charge for labor, transport, and expenses. Alexander of Hales, too, found that much commerce was morally justifiable, especially if the intention of the merchant was a moral one. His most significant contribution was to allow a merchant to profit from the risk involved in storage rather than, like Aelfric, transport. The important of this, as Langholm has pointed out, is that it deliberately introduced the element of time into the argument.” Aquinas stressed the right intention of the merchant, labor as an entitlement to profit, and the usefulness of the merchant to the State. “And this is the way in which commerce can become justifiable. This is exemplified by the man who sues moderate business profits to provide for his household, or to help the poor; or in order to ensure that the country does not run short of essential supplies, and who makes a profit as it were to compensate for his work and not for its own sake.”32
Chapter IV. Economic Thought and Other Intellectual Developments

As early as the twelfth century, Richard fitz Nigel, Henry II’s treasurer and Bishop of London, linked strong government with sound economic foundations, that supported economic nationalism with the wealth of state, and economic humanism with the wealth of the individual. “A century later, Giles of Rome switched the emphasis to the people. People needed to live in society, because no one was economically self-sufficient. They needed one another to make good their economic deficiencies not just of corn, but of all food. The only way they could get what they needed was to exchange the things they had in abundance for those which they did not have. For this, buying, selling, exchange, and contract were necessary, and the State existed to make these easier. Material goods were instrumental in the pursuit of the end for which political life was instituted. Kings and princes therefore had to rule their kingdoms so that their subjects should be rich in material goods, to the extent that they are able to live well. Ptolemy of Lucca recognized that ‘A king needs artificial riches, such as gold, silver, other metals, and the coins minted from them, to defend his government.’ John Fortescue advocated economic nationalism…that there may no realm prosper, nor be worshipful, under a poor king…that we should first have unity and peace within our land, rich and prosperity, and be the mightiest and most wealthy realm of the world.” In France, similar attitudes were observed: merchants gave a tenth of their goods to the poor and found many chapels, places of prayer, and hospitals for the poor. If God pleases with such goodness, “they truly deserve merit in heaven and goodness and honor in the world.”

The exaltation of the merchant developed in parallel with this economic nationalism. “In the fourteenth century the Italian civilian Bartolus, a friend of Dante and Petrarch, and his pupil Baldus, praised trade and commerce as the foundations of political power, and also encouraged the development of a large and prosperous merchant class in the cities. The two thing had become linked. On such foundations, the Italian humanists built. To take a random example, Coluccio Salutati, the Florentine chancellor, writing in 1381, regarded merchants as vital to the life of man: ‘This type of man is necessary to the progress of human society: we cannot live without him.’ One of the high points of economic humanism was undoubtedly Poggio Bracciolini’s dialogue on avarice. Without the cupidity which motivated economic life, all liberality would cease, ‘all the magnificence of cities would be removed, all culture and ornament would be destroyed, no temples would be built, no colonnades, no palaces, all arts would cease, and then confusion of our lives and of the republic would follow.’ It sounds like the description Hobbes gave of the state of nature in his Leviathan.” It was no longer impossible for a merchant to please God.

Robert S. Lopez and Irving W. Raymond introduce the growth of the merchant class, which implies the thought of trade. “The noblemen, or at least the landowners, would thus be the original kernel of the capitalistic classes….There is little doubt, however, that many nobleman invested capital in trade and gradually fused with the rich bourgeois families to form a new urban patriciate. This was especially common in the leading Italian cities” In the frontier towns, “The inventory of the estate of Armano, the skinner, and the accounts of the Bonis brothers illumine the rapidly growing stature of merchants in towns of recent formation along the expanding frontier of the communalized world.” They explain the joining the commerce of noblemen and the rapid growth of the status of merchants in the frontier region. Although trade and money-lending were looked upon as sinful, or at best, suspect activities for the medieval churches, the Order of the Knights Templars joined financial operations for merchants and bankers of Italy. The dignity and office of merchants is great and exalted in many respects, with respect to the advance of public welfare, useful and honorable management of properties and goods, an association with honorable and virtuous manner and activity, and finally good faith that gives reputation and credit as a good merchant. As the commercial revolution created the merchant class, they organized powerful associations protecting the bourgeoisie against the barons.
Chapter IV. Economic Thought and Other Intellectual Developments

Just Price and Just Wage: In the Middle Ages, prices were more closely linked to wages, and the just price was set at the production cost including materials, labor, and other expenses; while the dignity of labor was praised and its idleness was outlawed. Since wages are essential part of prices, the just wage is linked to the just price. The price and wage were usually set by three methods: the current market price known as the natural price, the price fixed by a public authority, and the price established by free negotiations; those which were judged on the basis of justice and equality. The level of prices and wages might practically be the combination of those three. In the medieval translation of Ethics, Aristotle suggests that human need is a measure of the value of goods in exchange. He considers a model of justice, not from the just wage, but from the idea of the just price or justice in exchange for mutual advantage of buyers and sellers due to widespread slavery in Greek society. “The just or virtuous person was one who avoided all extremes, and whose disposition led him to apply the mean, or moderation, to his behavior. Justice in the sense of righteousness was a universal quality. When he discussed justice in exchange, however, his concern was with particular rather than universal justice – justice as applied to relationships between people. This was divided into two types. The first was distributive justice, which allotted things to people in proportion to either their status or their contribution to the community. It could be applied especially to the relationship between the individual and the state. The other type justice, corrective, or rectificatory, was based on the arithmetical mean, which entailed strict equality…Corrective justice sought to establish an equal relationship between two individuals, and was therefore the foundation of contracts of exchange, of buying and selling, of lending, borrowing, and hiring. Distributive, proportional, justice came to regulate public relationship, and was the foundation of public law, whereas corrective justice, which corrected inequalities between people on a one to one basis, regulated private matters.”

Just price was simply the current market price, which was recognized by scholastics, by lawyers, and by officials whose duty was to enforce it, but it is less clear whether it was actually just. Moreover, discussions on the current market price were set within the context of a localized market, without any attempt to place it within the national economy. The influence of local supply and demand, and of the labor and expenses of the seller were discussed, but not issues of the wider economy, such as the level or state of the coinage in circulation, which, as we have seen, could also affect prices a long way. According to Roman law, the value of a thing was the price for which it could be sold - the current market price. Canon law was originally a capitulary of Carloman of the Franks of 884. The clergy were to order their parishioners not to charge strangers more for things than the price charged in the local market, otherwise the travelers could refer the matter to the priest, who was then to set the price with humanity,” which indicates the divergence between civil and divine laws in defining just price.
Chapter IV. Economic Thought and Other Intellectual Developments

The scholastics seemed to equate the current market price with the just price, and allowed that “the market price would be determined by the forces of both supply and demand and by labor and cost.” Reasoning on the just wage was similar. However, the power in medieval labor relations was heavily concentrated on the side of the employer rather than the employee. The medieval craft guilds were primarily associations of employers seeking profit from monopoly in the lack of ethical values. Though manual laborers were in a weak bargaining position, they were politically free to choose their employment and to make their labor contracts. The growth of the urban proletariat raised the question of the just wage, while different professionals and craftsmen called for wage differentials for their different services. It was not difficult for the merchants to extend the idea of expenses to the services of transport, storage and care with heavy risks, in addition to the cost of labor and materials. Meanwhile, scholastic authors had frequently restated and confirmed the labor theory to justify commerce and its profits. For example, Thomas Aquinas wrote that “a man may intend the moderate gain which he seeks to acquire by trading for the upkeep of his household (self-support), or for the assistance of the needy (charity): or again, a man may take to trade for some public advantage (public service),” by viewing that the buyer or the seller owes restitution, if the sales price deviates from the just price. According John Scotus, the individual merchant deserves to get paid for their labor, which is socially necessary “because no one would be a merchant unless he was paid for it.” Artisans and merchants get paid through a profit margin that is their revenue minus costs. The wages for professionals and craftsmen were normally much higher but varied according to the nature of skill and market conditions. Albertus Magnus explained the bottom line of prices and wages: “If the maker of beds does not receive for a bed as much as he has laid down in expenses, he will not make any more beds, and thus the bed-maker’s craft is destroyed.” In proving the just price or the just wage, if there is nobody willing to pay him more, we can say that this price or this wage must be just.  

On the other hand, the just price could be fixed either by the estimation current in the market or by the public authorities for the common good. In the late fourteenth century, Henry of Hesse (d. 1308) was one of the first to discuss official price-fixing. He considered it necessary to prevent the rich, the idle, the avaricious, the dishonest, and above all the usurers, from taking advantage of honest workers and the poor. “It was only if the authorities failed to fix the price that the parties to the sale contract had to evaluate things.” In France, Jean Gerson (d. 1428) admired Hesse and recommended that all prices should be fixed by the state. In weight and measurement, there were erroneous local variations, which should be fixed. After the Black Death, the labor shortage created a community of interest between the civil authorities and the crafts in enforcing government legislation. “In London the mayor and aldermen became justices of laborers in 1349. As such, they had to enforce that year’s ordinance, and they were given all the necessary punitive powers. In 1350, even before the Statute of Laborers was issued, Edward III had attempted to fix both prices and wages throughout the City of London, and enforcement was to be by two to four good men in each ward.” The natural and the legal prices of goods and services were fixed by intangible market forces or by public officials. The justice recommended in free bargaining from the time of Aquinas to be based on proportional rather than arithmetical equality. The concept of proportion equality also entered into free bargaining over the just wage, which was different from haggling over commodity prices, because of the inequality of employer and employees. Moreover, the economic and social status of a merchant, an employer, or an employee might be a factor in deciding the just price or the just wage: the status was only a marginal factor in dealing with the price of goods, but more central with the price of labor. There was collective bargaining over wages in various associations of workers-journeymen guilds, drinking clubs, brotherhoods often formed under of a religious fraternity, at least closely associated with one.
Chapter IV. Economic Thought and Other Intellectual Developments

3. The Idea of Usury and Interest Rates

Although coinage is dated from the first millennium B.C., the old Sumerian documents, circa 3000 B.C., reveal “a systematic use of credit based on loans of grain by volume and loans of metal by weight. Often these loans carried interest.” In prehistoric times, primitive credit probably existed in “a loan of seed to a son or brother or neighbor until harvest time or a loan of animal or of a tool or of food.” “Such transfers are called gifts if no repayment is expected, loans if repayment is expected, and loans at interest if the repayment of a certain amount more than was loaned is expected.” Before the evolution of governments, exchanges of gifts between chieftains were common, and loans without interest were similarly common between individuals, like returning of the tools with the same condition as before. At very early times, however, as the loan of seed or of animals yielded an increase, part of increased production by this loan could be returned as interest. Thus, productive loans generated an agreed rate of interest, while grain was used for repayments as a medium of exchange and a standard for deferred payments. Some documents of Babylonia and Assyria illustrate specific types of transactions. In Babylonia, circa 2000 B.C., “Two shekels of silver have been borrowed by Mas-Shamach, the son of A., from the sun priestess Amat-Shamach, daughter of W. He will pay the Sun-God’s interest. At the time of the harvest, he will pay back the sum and its interest upon it.” In Assyria probably during 1000-700 B.C., “Five imer of barley belonging to the heir apparent, in the hand of Taquini II, placed at the disposal of Hamathutha of...The barley increases by 50 qua the imer.” In the Sumerian period, 3000-1900 B.C., “the customary rate of interest for a loan of barley was 33 1/3% per annum and for a loan of silver was 20% per annum.” In the Babylonian period, 1900-732 B.C., “Hammurabi recognized the old customary interest rates and established them as legal maxima” and after the Persian conquest, a common rate of interest was around 40 % per annum.

In the seventh century B.C., Lydia used the official coinage of money, which was pieces of metal stamped by the state as a sort of legal tender for the payment of debts and taxes; that was adopted by the Greeks, who developed the commercial, urban, and monetary economy. The credit system facilitated Greek trade, for which extensive borrowing at interest was necessary, particularly on ship loans. While personal loans were secured by real estate in Greece, sea loans were highly charged as a form of insurance premium. After the Peloponnesian War, the Athenian economy was difficult; and the finance of Greek states became more difficult after the conquest of Macedonia. Aristotle condemned interest on loans as unnatural breeding of money by money. The banking functions of deposit and loan originated in the temples; and in the third century B.C., the use of credit was general and the real estate loan was convenient at the agreed rates of interest. As Alexander seized and distributed a vast hoard of Persian gold and silver, the money supply was multiplied by several times in a few years, so that prices rose and interest rates declined in the Mediterranean world. Roman law had legalized interest: the Romans set interest rates by legal maxima. According to the Twelve Tables, circa 443 B.C., thirty days were allowed for the debt repayment. “Unless the debt was discharged, the creditor could seize and fetter the debtor, but he had to feed him; several creditors could seize and divide one debtor’s property. A creditor exacting higher interest than the legal maximum...was liable to fourfold damages.” The civil war caused financial stagnation, but large fortunes came from military awards and land investment under the empire. During the reign of Augustus, “the rate of interest on best credits fell far below the legal limit” of 12% that remained unchanged over centuries in the west. The Justinian Code reduced the traditional legal limit of interest rates of Byzantium from 12–12 1/2% to 4–8% per annum depending on the status of the creditor, and accumulated interest could not exceed principal, though there were slight modifications in the later centuries.
Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-3-1. Tolerance of Usury, accessed 1 October 2015,
http://www.medievalists.net/wp-content/uploads/2012/10/6a00d8341bf67c53ef01539433f3ea970b-800wi.jpeg

Photo IV-3-2. Modern Usury & the Failure of Christian Ethics
https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcQJ0qiQ7xN6xmuxxU9-eTN1oVcpKkXq_f20_HAdy9PhM_gdtT21ow, accessed 1 October 2015
“The normal rates, which are frequently quoted for Mesopotamia, Greece, and Rome, appear for the most part to be rates paid for conventional short-term personal loans, usually but always secured, and often secured on real estate... As business organizations of size and complexity did not exist, there were loans to persons or to partnerships, probably most often to meet person needs but sometimes to finance trade or industry. The quotations are generally for best credits. This assertion by historians is supported by the risk rates which, when the law allowed, ran up far higher. There also are pawnshop rates and loan shark rates which are far higher than the normal rates. These latter, therefore, were probably well secured, either by land or movable valuable or by the established credit of a wealthy citizen. If he desired, the Greek or Roman investor would get three to ten times these normal rates by taking the bottomry risk. Finally, we have excellent evidence of great stability in these normal interest rates over known long periods of time. This stability was due no doubt in part to tradition. Even today tradition plays an important role in determining interest rates on loans far removed from a money market.” These ancient loans were probably most like modern personal loans made by small banks and individuals, if they are compared with modern loans. The credit structure in ancient times were different from that of modern times. “There were few loans floated in volume by states. States were not in high credit standing. They were not often able to pledge the private resources of their people. They had not learned the principles of deficit financing. There were no large private corporate debtors. There was no bourse market to permit creditors to liquidate loans in advance of maturity; this device had to wait the Italian financiers of the Middle Ages. There were no large banking organizations able to supplement the metallic currency with a large volume of credit instruments, able to create deposit money in volume, and able to act as convenient intermediaries between debtors and creditors. As a consequence, there could be no large organized money market capable of reflecting quickly the supply and demand for credit and of mobilizing large credit resources.”

The risk factor in ancient loans must be stressed since there were no safe loans in antiquity. “But the margin of security was often very large, the term was short, and the sanctions for default were very severe: personal slavery in Babylonia and Rome. Risk loans certainly were common, and their rates were many times concurrent normal rates. In Greece, at least, anyone could speculate if he desired... No doubt the legal status of Greek and Roman creditors improved as time passed and this facilitated credit. But the sanctions of creditors seemed in some respects better under the Code of Hammurabi than they do today.” Moreover, lending or investing money in ancient times was relatively inconvenient because of a lack of institutional intermediaries. “There was a good measure of continuity in the development of credit for over this entire ancient era... The Greeks adopted certain Babylonian weights and measures. It is likely that the elaborate but small-scale banking methods of Babylonia were also imitated by the Greeks; in any event the Greeks used similar forms. These credit forms were exploited by the Greeks in an atmosphere of freedom and laissez faire very different from that of Babylonia. Finally, Roman bankers were largely Greeks who must have brought with them to Rome all of their techniques and there readopted them to an authoritarian society. Together with this continuity of credit forms, other trends and events influenced the entire Mediterranean world with some uniformity. These included the supply of precious metals, the activity of trade, the safety of the seas, and the prevalence of war or peace.”

In reviewing interest rates in ancient times applying normal loans for 2-5 years, annual interest rates of Babylonian loans until sixth century B.C. were mostly 10 to 25 percent. Which could imply great volatility over a period of time, but could also imply a variety of types of loans. Interest rates of Greek loans were 10 to 12 percent which seem the most stable over a long time; while those of Roman were 4-12 percent, though Roman rates became very volatile from 100 B.C. to A.D. 200. Perhaps a true money market had developed in Rome by that time.43
Chapter IV. Economic Thought and Other Intellectual Developments

The Nature of Usury: Usury is “to receive back more than you have given in a loan” or it is “whatsoever exceeds the principal” as Gratian defined in his Decretum. The Hebrew Scriptures allowed interest on loans to foreigners, but not on loans to Israelites (Deut. 23.20), and granted a remission of debts every seventh year: “every creditor shall remit the claim that is held against a neighbor, not exacting it of a neighbor who is a member of the community, because the Lord’s remission has been proclaimed (Deut. 15.1-2).” Jesus Christ taught that “If you lend to those from whom you hope to receive, what credit is that to you? Even sinners lend to sinners, to receive as much again. But love your enemies, do good, and lend, expecting nothing in return (Luke 6.34-5).” The Council of Nicaea of 325 and some others prohibited usury by clerics; and Latin Fathers such as Jerome, Ambrose, and Augustine were against usury based on teachings of the Bible. Pope Leo (440-61) not only forbade clerics to take usury but declared it to be guilty of “shameful gain” for laymen to take usury. Charlemagne followed the earlier prohibitions, and it was the first time in history for the state authority to forbid usury to everyone. Since then, both church and state attacked usury, but it was not examined in detail by scholars until the eleventh century. The Second Lateran Council of 1139 wrote that “we condemn that practice accounted desppicable and blameworthy by divine and human laws, denounced by Scripture in the old and new Testaments, namely, the ferocious greed of usurers; and we sever them from every comfort of the church, forbidding any archbishop or bishop, or an abbot of any order whatever or anyone in clerical orders, to dare to receive usurers, unless they do so with extreme caution; but let them be held infamous throughout their whole lives and, unless they repent, be deprived of a Christian burial.” Pope Alexander III (1159-81) declared that credit sales at a price above the cash price were usurious. The Third Lateran Council of 1179 decreed that “notorious usurers should not be admitted to communion of the altar or receive Christian burial if they die in this sin.” This view underlines the judgment of God against usurers who violated the divine law.44

Robert of Courcon (died in 1218) equated usury with the crime of heresy, and encouraged the faithful of Paris to try to convert usurers from their evil ways: heresy was a crime that was linked to fornication, murder, and robbery. William of Auxerre (1160-1231) compared the sin of usury to the sin of unlawful desire, which could not be justified by the moral end.45 Usury was a charge exceeding the principal of a loan of money, which was generally considered as theft or robbery, and the worst was a theft from the poor; an offense against the Seventh Commandment. However, “Many banking firms openly rent at interest, and claimed immunity on the theory that the law applied only to individuals. The cities of Italy made no excuses for paying interest on their government bonds. In 1208 Innocent III remarked that if all usurers were excluded from the Church as canon law demanded, all churches might as well be closed.” Thomas Aquinas (1225-74) wrote four articles on the sin of usury. (a) Whether it is a sin to take usury for money lent?: money was invented chiefly for the purpose of exchange, hence, it is by its very nature unlawful to take payment for the use of money rent, which payment is known as usury. (b) Whether it is lawful to ask for any other kind of consideration for money lent?: without sin a lender may enter an agreement with the borrower “for compensation for the loss he incurs of something he ought to have, for this is not to sell the use of money but to avoid a loss. (c) Whether the seller is bound to state the defects of the thing sold?: if a man has by usury extorted from another his house or land, he is bound to restore not only the house or land but also the fruits occurring to him therefrom, since they are the fruits of things owned by another man and consequently are due to him. (d) Whether in trading it is lawful to sell a thing at a higher price than what was paid for it?: it is by no means lawful to induce a man to lend under a condition of usury, yet it is lawful to borrow for usury from a man who is ready to do so and is usurer by profession, provided the borrower have a good end in view, such as the relief of his own or another’s need.46
Although all usurers were bound to make restitution in theory, it did not work quite like that in practice: "The manifest usurer could be compelled by the Episcopal courts to make restitution, whereas the occult practitioner was merely to be persuaded to do so by his confessor." In fact, usurers were indispensable to secular rulers, so that monarchs began to protect them from the twelfth century; while the Church persecuted the merchant-usurers and held restitution from the twelfth century, but restitution was in favor of the Church. In 1274, the Second Council of Lyons invalidated the wills of usurers who had not made restitution: "Nobody is to assist at the wills of notorious usurers or hear their confessions or absolve them, unless they have made restitution for their usury or have given a fitting guarantee, as far as they can, as described above. The wills made in any other way by notorious usurers have no validity, but are by law null and void." Restitution was divided into two types: certa and incerta. Certa: the wills of usurers, who had made restitution in their lives, were distributed by the consultation with theologians and canon lawyers. Incerta: before their death, families of usurers tried to make restitution to purchase heaven through patronage of the good and "ostentatious gifts" to the Church. Though the fruits were supposed to be given to the poor, the Church gained a great deal of wealth from restitution of incerta: some observers thought that restitution was a robbery. On the other hand, the papacy was involved in lending money to the clergy through the pope’s bankers, and the money could be paid back to it in the form of taxes. “In England, in 1229, papal tenths (clerical taxes) were being exacted so harshly that the clergy were forced to borrow from the usurers who came over with Stephen, the pope’s nuncio, at ‘the rate of one noble for the loan of twenty by the month,’ that is, a yearly rate of 60 per cent.” The Church condoned usury many cases. “Here...usury is exercised by many, both clerics and laymen, every single day, sometimes secretly, sometimes openly...As for the judicial forum, justice is not done against usurers for this reason, that judges of today, in the execution of justice concerning this sin, are lukewarm and remiss and in no way wish to punish it.”

Generally, the wealth of the church like that of nobles was in land, so that the clergy and the nobility resented the rising power of merchants. The church controlled the profit motive of merchants with a useful weapon of Christian morality. Nevertheless, the commercial revolution required a proper adjustment of money to the changing environment: first, the expansion of trade and industry demanded the use of idle money for private enterprises; second, the state urgently needed extra money for wars or emergencies like Crusades that exceeded tax revenues; third, the church had a problem in managing of money due of losses from default of bad loans, cost of management, delay of repayment, inflation, and other risks. It was not unusual that the church, the state, and the guild representing merchants and craftsmen had a common motive to modify the idea of usury and the doctrine of interest toward a compromised direction, although there had been a consistent conflict between the Christian ethic and the profit motive of capitalism as well as between ideal and reality. In 1250, Thomas Aquinas formulated a new ecclesiastical doctrine of interest: “the investor in a business enterprise might legitimately share in the gain if he actually share in the risk or the loss; and loss was interpreted to include any delay in the repayment of the loan beyond a stipulated date.” Pope Innocent IV accepted the principle; canonists admitted the right of states to issue interest-bearing bonds; and “Pope Martin V in 1425 legalized the sale of rent charges; after 1400 most European states repealed their laws against interest; and the Church prohibition survived as a dead letter which all agreed to ignore.” The recognition of interest on money loans was significant in three senses: first is the liberalization of the capital market with the more use of idle capital stored at churches and monasteries as well as individual households; second is in reasonable reflection of hidden costs on the just price of goods and services due to previous exclusion of interest on loans; and third is in stimulation of banking industry because banks could legally impose interest on loans as part of costs.
Chapter IV. Economic Thought and Other Intellectual Developments

The Theory of Interest: Usury came from Latin *usura* that means the price paid for the use of money, and interest came from Latin *interesse* that means "to be lost" not profit. Interest became distinct from usury. Usury was the case that the repayment of money loan to the lender exceeded the principal with the cost of labor, expense, and risk arising from the loan; while interest was part of the repayment more than the principal, which was the arising cost on money loan from any reasons like damages to be restored to the lender for justice. The interest payment was justified by three most extrinsic factors: "delay in payment, loss emerging, and profit withheld." First of all, "the creditor really preferred to have his money back on time rather than have it later with the penalty attached. To prefer to receive the penalty was to sell both time and the debtor's industry." Time naturally causes things either to increase or to diminish, and alters the value or quality of things. Guiles of Lessines (died 1303) considered seasonal variations such as market prices for crops; an increase over time in the number, size, or value of natural objects such as crops, forests, or animals; and the change of demand in the local market that changes prices. As a result, the change of higher prices for credit is justified because of the changing values of goods over time.

If a man lends ten shillings at Easter to receive as many bushels of wheat in harvest, then he may receive more bushels than the previously purchased with ten shillings: this is not usury because time created unintended gains, which was justifiable. In addition, labor and industry belonged to man and were the true source of economic profit, so that a reasonable amount of wages was legitimate profit that should not be restored by the usurer to the borrower. Second, damages and losses on money loans should be included in interest, which is justifiable: the most distressing loss was "where the creditor himself was forced by the lack of his own money to borrow at usury" because of the delayed payment or other cases of losses. Third, if the expected gain is missed by delayed payment or any other reasons, the loss must be compensated with an additional charge of interest as much as the missed gain or the arising cost, which is justifiable.

Despite many differences from modern times, credit forms were developed in the Middle Ages and interest rates were volatile by type of loans as well as by time and region. (i) Forced loans were levied on wealth citizens by states like Venice, Florence, and Genoa from a very early date. Forced loans were annually repaid to lenders as gift and interest from tax revenues of the state, but by 1400 interest on public loans could compensate arising damages, which was not usury. (ii) The business partnerships and associations had been recognized since Roman times, and its profit was approved as an earned reward for effort and risk about the same time as other forms of credit. (iii) The "census" was a normal form of investment in land developed in early feudal times as "an obligation to pay an annual return from fruitful property." The contract resembled the modern annuity that the buyer pays a certain agreed amount in cash, and the seller becomes a debtor who annually pays an agreed amount for a certain years or forever according to the agreement. (iv) The deposit had become a means of investment: investors deposited their money at any merchant bank at variable rates of profit, which depended upon the success of the commercial ventures. (v) The bill of exchange was an important credit form for the remittance of foreign exchange as early as the twelfth century, and its standard form became a common instrument of credit in the fourteenth century, although it was not discountable and interest could not be openly charged. The papal state widely used exchange banks due to idle funds: Bruges had been a major center of exchange banking since the thirteenth century, followed by the Italian cities. (vi) To correct the abuses of manifest usurers, Barbarus, Governor of Perugia, established the first public pawnshop called *Mons Pietatis* in 1461. The public pawnshop was financed by charitable donations and run for the benefit of the poor; and charged a small fee for the care of the pawns and the expense of administration; and its interest rate was at first 6%, which was much lower than 32.5% to 43.5% that was previously permitted to private pawnshops.\(^49\)
Chapter IV. Economic Thought and Other Intellectual Developments

During much of the Middle Ages, the economy of Western Europe can be discussed in terms of geography rather than nations. In the fifth and sixth centuries, much of the old Roman economic system was retained. “Roman towns remained centers of commerce and of clerical and civil administration. While the trade of northern Europe became more localized and tended to withdraw from its Roman orbit, much trade continued along the old Roman routes…The Mediterranean Sea was the main artery of commerce, and through it communication was still maintained with Constantinople, Africa, and the East. Although trade, the circulation of money, and probably population were declining, there was less change in the economic system of important parts of Western Europe than occurred later, after the Muhammadan attack.” In the seventh century, in 632 the Arabs conquered Syria, Egypt, and Persia; in 669 they seized Asia Minor; and in 698 Carthage. In 711 they defeated the Visigoths and conquered Spain. They almost held southwest of Europe in siege, and Syrian navigation between the ports of the west and Asia and Egypt ceased. From the beginning of the eighth century, western European commerce was largely depressed. At the time of Charlemagne, Western Europe stopped using imported luxuries, which stroke their industry and commerce to fall and forced themselves into a largely agricultural economy. “Money was regularly used…but the lack of commerce reduced its circulation. Yet, just at this point, Charlemagne devised a new silver coinage to supplant the Roman gold coinage. His new small-denomination silver coins were well suited to an agricultural economy that did not know trade on a great scale. His currency subdivisions survive to this day. The only tangible coins was the silver penny (denier), but for accounting purposes twelve pence equaled one shilling (sou), and twenty shillings equated one pound. Charlemagne was the first prince to forbid all usury.”

In the ninth century, Vikings, Magyars, and Muslims invaded and made European economic life difficult in many places, which made Europe an agricultural society. Feudalism disintegrated state authority; the exchange and movement of goods largely declined; the merchant class almost disappeared; and serfdom became general. The Church had great financial power and ran the whole business of government, and monopolized literacy. Some markets were developed, but they were small local affairs permitting a local exchange of goods. The famous Roman roads had deteriorated and in places almost vanished. Municipal trade and commerce were almost extinct, and the towns remained largely as administrative centers for the Church. Nobles ruled from country estates and disregarded higher authority; and they usurped the royal rights of coinages. Venice exceptionally traded not only with Constantinople but with the Arabs of Africa as well as with Syria. In the tenth century, many economic activities in Europe deteriorated further. While petty warfare continued, there were little communications between Western Europe and the Arab ports of Spain, Africa, and the East. In 911 Charles the Simple, the king of France, granted Normandy to the Norse. In 936 Otto the Great, the king of Germany, finally defeated the Magyars, became Emperor, who reformed the papacy and helped revive Europe. At the end of the century, Arab countries began to import slaves, metal goods, timber, and other commodities from Europe and to pay for them in gold. The Vikings traded from Kiev to Constantinople; and with the Arabs and Jews of the Caspian Sea. Flemish woolen cloth found a great northern market. The population of Europe had been declining for centuries, and began to increase after the middle of the tenth century. Surplus serf ran away for betterment, and the younger sons of knights sought adventure and gain. Traveling merchants were the only group independent of the land; they formed a class apart; and they traveled over the wretched roads or waterways in armed bands. Venice obtained great concessions from Constantinople, and her people began investigate money in maritime ventures on a scale requiring some financial organization. “Coiners and money changers rose steadily in power and prestige, and commercial contracts were developed in rudimentary form. Italian merchants replaced Greeks, Syrians, and Jews as middlemen with the East.”
In the eleventh century, politics and economy revived in Europe, as the Vikings had turned merchant traders, and the Magyars and the Arabs became weakened. Italian merchants specialized in small luxury items, such as spices and fine cloth, which could easily be transported overland and sold at great profit. “Byzantine and Arab gold coins began to circulate in Europe, and the mobility of money increased. Currencies continued in frightful confusion and were progressively debased and called down, but silver mining in Hungary and Saxony was rapidly developing. This was the period when the towns of northern Europe obtained power and autonomy. They built walls. Municipalities were organized, financed, and dominated by the new merchant class, the burghers. Many Italian cities achieved their freedom.” In spite of this evidence of progress, the new economic activities were still small scale. During the twelfth century, the economic development of Western Europe accelerated. “The new Mediterranean commerce penetrated inland. As a result of enlarged consumer demands, agriculture and industry revived. The wine trade became extensive. Silk was manufactured in Lombardy and exported. Flanders became a land of weavers and fullers who moved from the country to the towns...Flemish cloth traveled by land to Italy and by sea to Novgorod. Flemish, Italian, and northern traders met at the fair of Champagne. Active trade was assisted by a growing supply of money from mines. Prices rose. The supply of, and demand for, luxuries increased. Since feudal rents were often fixed in terms of a depreciating currency, many great landowners became poor; manorial industry disappeared in favor of urban industry. Serfs readily purchased their freedom; they could pay higher free rents than their traditional tribute. Agriculture became specialized. As the population increased rapidly, new free cities sprung up with charters and strong walls, ruled by merchants. There was general migration from country to town.” In the North, the German Hansards took the place of maritime trade. Now commercial capitalism developed rapidly, and private fortunes were accumulated.

Meanwhile, merchant bankers received deposits and arranged foreign remittances, made loans on land and on houses, and spread their branch offices all over Europe, dominating international finance. In the twelfth century, “Money lending in England was then largely in the hands of Jews. If security was excellent, their usual rate, according to one report, was 2 pence on the pound per week; this was equivalent of 43 1/3% a year or over 52% if compounded. If the security was poor, the annual rate might be 80-120%. Because the majority of medieval loans were repayable in less than a year, interest was often stated at weekly rates. Continental pawn brokers also often charged 43 1/3% a year, but rates were frequently higher...At the end of this century, commercial and official loans in the Netherlands were reported at rates between 10 and 16% per annum. In 1200 in Genoa, an interest rate of 20% was stipulated for commercial loans by banks. Rates of 43-50% on bottomry (sea) loans are reported. Bottomry rates, however, are not classified here as interest rates, because the lender generally assumed the loss in case of maritime catastrophe. It is probable that in the Netherlands, as early as 1200, rich merchants bought land rentes and house rentes, that is, loaned money at long term against real security, at 8-10% per annum. Such long-term annuities or mortgages...were generally at rates lower than the rates on short-term loans either princely, personal or commercial. Few twelfth-century rates are available from Italian towns although credit there was well advanced. Information becomes far more plentiful in the next century. In 1164 Genoa farmed some of her revenues to a group of capitalists for eleven years in return for a loan, rate unstated. Such loans were later consolidated into the debt administered by the famous the Bank of St. George, which played a leading role in financing the rise of Genoa. In Venice in 1171, the government exacted a forced loan from its citizens. It gave them bonds in return, but did not make regular interest payments on these bonds until the next century. Interest on forced loans does not, of course, represent a going or acceptable rate of interest. This, however, was the beginning of Venice’s famous funded debt.”
Chapter IV. Economic Thought and Other Intellectual Developments

The thirteenth century continued economic expansion. “It was the century of the Mongol conquest of Asia, from which the Arab World never recovered. This conquest led to a great Asiatic peace which opened Asia as far as China to European trade…The population of Europe continued to increase, and free labor grew very fast and became urbanized. Prices continued to rise. Nobility often incurred debt and ruin. Emancipated peasants often owned their soil in return for a census (mortgage), which sometimes was a hereditary obligation. Rural peace was reestablished in many places and trade security grew. Therefore, merchant adventures began to stay at home and send agents abroad. This trend later led to the decline of the fairs. Foreign hosts, called brokers, who had entertained traveling merchants, began to act for them and later developed brokerage monopolies. Many merchants became purely investors; others joined forces in great companies which supplanted the individual adventure.” In loans, the credit of the best merchants and the credit of free towns was generally much better than the credit of princes. Princes could not bind their subjects to pay their debts. Frederick II (1211-50) usually paid 30-40% interest to his creditors. Similar high princely rates were common when the collateral was not liquid. “High interest rates were a subject of widespread complaint at this time by Church, State, the common man, and especially by the entrepreneur. State tried to fix legal limits above which would be incurred the sin of usury. In Milan, 15% was the legal maximum; in Sicily, 10%. In Verona, in 1228, it was 12 ½%. In Modena, in 1270, it was 20%, and in Genoa throughout the thirteenth century it was 15%. In England, pawnshop limits were set at 43 1/3% in the thirteenth century; in some places pawnshop limits were much higher: for example, 300% in Provence and 173% in Germany.” On good commercial credits in Italy in the thirteenth century, interest rates were 20 to 25% per year. Commercial rates in northern Europe at the Champagne fairs circa 1270 were quoted at 15 to 20%; and in the Netherlands from 1200 to 1350 a range of 10-16% was quoted.

In the fourteenth century, the economy suffered from famine, disease, and war. The decline of labor forces pushed the wages up and rents down; the falling demand for food caused the prices of agricultural products; and trade was hampered. In the large part of Europe, “the prosperous level of 1300 was not reached again before the 16th or 17th century. In the course of the Hundred Years’ War, both kings of England and France defaulted on their debts, “most of the big banks in Italy broke, and this led to reforms: in 1374 Venetian banks were forbidden to trade in speculative commodities; in 1403 they were required to hold two fifths of their assets in public debt; bank examiners were appointed.” With the growth of nation states, economic protectionism spread. Nevertheless, Bruges continued to be trade center. “The Italians now organized fleets to go by sea from the Mediterranean to Bruges and to London. Ships of the German Hanseatic League carried French wines to the Baltic. Backward areas, such as Bohemia and Poland, became substantial importers and exporters.” Now great commercial companies grew rapidly. “Princes cooperated with merchants to their mutual advantage. The coinage of gold spread. Modern bookkeeping methods began to develop. In spite of frequent wars between Venice and Genoa, the closing of the trade routes to the East, and bank failures, Italy retained its trade supremacy. Greater and greater concentrations of Italian capital were accumulated.” Loans to princes remained in high interest rates. “For example, Frederick the Fair of Austria, 1286-1330, borrowed at 80% interest. In 1319 the Angevin King of Naples, Robert of Anjou, 1275-1343, borrowed at 30% from Florentine bankers. With good security the rate of interest was much less. In 1328, for example, the Duke of Cambrai borrowed in Florence with precious jewels as collateral at 15%. In 1364 the Countess of Bar pawned her gold coronet for a loan at 50%. Philip the Fair (IV) of France, 1285-1314, borrowed heavily at unstated rates, but instead of repaying his bankers he banished them, cancelled his own debts and decreed that the principal of all other debts must be paid to the Crown.” Edward III of England, 1312-77, repudiated his debts, ruining Florentine bankers.
Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-4-1. Measuring the Medieval Islamic Economy

Photo IV-4-2. Turkomen on the Silk Road with Camels
The influence of Islam on medieval Europe began with the Muslim invasion of Spain in 711 and of Sicily and Italy in 830s. The main motive of Arab expansion was Jihad, holy war, associated with fighting against the infidel. The Muslims at Medina functioned as a tribe or federation of tribes. At first, Jihad was directed against neighboring pagan tribes who were not in alliance with Muslims, considering Jews, Christians, Zoroastrians and other monotheists as sister religions. The aim of the Jihad was not in conversion but in the submission of Muslim rule with the status of protection, although they were not allowed to bear arms or marry Muslim women or occupy the highest offices of the state. As the Romans learned from the Greeks, the Arabs learned from the western culture, and Islamic culture remained at a high level from the mid tenth century until the seventeenth century. The first Muslims were men from the commercial center of Mecca and the agricultural oasis of Medina, not Bedouin in the desert. Muhammad himself was engaged in actual trade as an employee of a company of later his wife, by traveling into Syria to bring back Byzantine merchandise for sale on the Mecca market. Mecca was a town of trade and finance, and their merchants organized trade and small industries in the region from Palestine to south-west Arabia, and extended to Africa. In this regard, the Islamic religion had been favorable to trade and profit-making. As Spain and Sicily came under the Islamic rule, the Muslims expedited commercial relationships with non-Muslims. In about 800, the Mediterranean was dominated by Muslim fleets, and Arab pirates based on Sardinia and Corsica was powerful until the eleventh century, though the Byzantine was superior in the Adriatic and Aegean Seas. Actual transport of goods in the Mediterranean was mostly handled by the Italians, not the Arabs, due to the lack of their trade interest with the west. The Italian merchants carried goods between Italy and Egypt, but the Arabs did not allow them to pass through Egypt to the Red Sea or the Sudan.

Classical Muslim scholars made valuable contributions to Islamic thought on issues involving production, consumption, income, wealth, property, taxation, land ownership, etc. “Perhaps the most well-known Islamic scholar who wrote about economics issues was Ibn Khaldun (1332-1406), who has been called the father of modern economics.” In his History of the World, he thought that asabiyah or social cohesion is the cause of some civilization. “Ibn Khaldun felt that many social forces are cyclic, although there could be sudden sharp turns that break the pattern. His idea about the benefits of the division of labor also relate to asabiyah, the greater the social cohesion, the more complex the successful division may be, the greater the economic growth. He noted that growth and development positively stimulates both supply and demand, and that the forces of supply and demand are what determines the prices of goods. He also noted macroeconomic forces of population growth, human capital development, and technological developments effects on development. In fact, Ibn Khaldun thought that population growth was directly a function of wealth. According to Timur Kuran, not until the mid-twentieth century was there a body of thought that could be called Islamic economics that was ‘recognizable as a coherent or self-contained doctrine.’ But around 1950 ‘campaigns launched to identify self-consciously, if not also exclusively, Islamic patterns of economic thought and behavior.’ Famous 20th Century Muslim nationalist and author Muhammad Iqbal, for example, did not refer to religion in his treatise on economics. Islamic scholars who considered Islam to be a complete system of life in all its aspects, rather than a spiritual formula believed that it logically followed that Islam defined economic life, unique from and superior to non-Islamic systems. Islam economics emerged in 1940s according to the Encyclopedia of Islam and the Muslim world." In this regard, here our discussions are very limited to fundamental economic concepts of Muslim states and society under the control of Islamic doctrines throughout the Middle Ages.
Islamic Prohibitions, Ethics and Norms: Islamic law basically prohibits Riba, Gharar, and Maisir which cause contracts invalid and voidable, being summarized as follows:  

(a) Prohibition of Riba: Shariah, Islamic law of Kohran and Sunnah, strongly condemns Riba known as interest in commercial terminology. “That which you give as Riba to increase the people’s wealth increases not with God; but that which you give in charity, seeking the goodwill of God, multiplies manifold (30:39).” “And for their taking Riba although it was forbidden for them, and their wrongful appropriation of other people’s property. We have prepared for those among them who reject faith a grievous punishment (4:161).” “O believers, take not doubled and redoubled Riba, and fear Allah so that you may prosper. Fear the fire which has been prepared for those who reject faith, and obey Allah and the Prophet so that you may get mercy (3:130).” In line with verses of the Kohran, traditions of Holy Prophet reiterate the prohibition of Riba. From Jabir: “The Prophet cursed the receiver and the payer of interest, the one who records it and the witnesses to the transaction and said: They are all alike (in guilt).” Profit from trade and business along with its liability is permitted; but return on cash or a converted form of cash without bearing liability in terms of the result of deployed cash or capital is prohibited.  

(b) Prohibition of Gharar: Gharar refers to “the uncertainty or hazard caused by lack of clarity regarding the subject matter or the price in a contract or exchange. A sale or any other business contract which entails an element of Gharar is prohibited.” For example, the sale of a fish in water, or a bird in the air involves uncertainty or risk or hazard, so that any kind of transactions involving excessive uncertainty in respect of the subject matter and the price in a contract should be prohibited. Additionally, examples include ignorance about the species being sold, about the quantity of the object and the price, lack of specification of the item being sold, sales of debt, ignorance of the time of payment in deferred sales, contracting on a nonexistent object and or the inability to deliver the object, indicating more than one price or option in a contract unless one is specifically chosen. The general principles for avoiding Gharar in sales transactions are: “the contracts must be free from excessive uncertainty about the subject matter and its counter value in exchanges; the commodity must be defined, determined and deliverable and clearly known to the contracting parties; quality and quantity must be stipulated; a contract must not be doubtful or uncertain so far as the rights and obligations of the contracting parties are concerned; there should be no Jahl or uncertainty about availability, existence and deliverability of goods and the parties should know the actual state of the goods.” Gharar is less significant than Riba. 

(c) Prohibition of Maisir: Maisir means the game of chance or gambling: one gains at the cost of other(s); and a person puts his money or a part of his wealth at stake wherein the amount of money at risk might bring huge sums of money or might be lost or damaged. “O you who believe! intoxicants and gambling, sacrificing to stones, and divination by arrows, are abominable actions of Satan; so abstain from them, that you may prosper (5:90).” “Satan intends to excite enmity and hatred among you with intoxicants and gambling, and hinder you from the remembrance of Allah, and from prayer; will ye not then abstain? (5:91).” “They ask thee concerning wine and gambling. Say: ‘In them is great sin and some benefits for people; but the sin is greater than the benefits (4:219).’” Present-day lotteries are also a kind of gambling: governments and public or private sector corporations mobilize funds on the basis of lotteries and draws, which should be prohibited. Draw-based prize schemes launched by financial institutions are also repugnant to the tenets of the Shariah due to the involvement of both Riba and Maisir. In addition to the three prohibitions, Islamic law requires a number of ethics and norms to avoid inequitable gains and injustice. The ethical standards provide trustworthiness in business transactions and generosity in bargaining; and fair dealing encompasses honesty, straightforwardness, free consent, and negation of misstatement, misrepresentation and exaggerated description of products as discussed below.
In business ethics and norms, five categories can be considered to conduct of economic activities in general, and commercial transactions in particular in Islam society.

(i) Justice and Fair Dealing: The Muslims view that justice keeps the sky and the earth in their right places and is the cementing force between various segments in a society. “An let not the enmity and hatred of others make you avoid justice. Be just; that is nearest to piety (5:8).” “You who believe stand steadfast before Allah as witness for (truth and) fair play (4:135)” which means that whoever believes in God has to be just with everyone. “And eat up not one another’s property unjustly (in any illegal way, e.g. stealing, robbing, deceiving, etc.) nor give bribery to the rulers that you may knowingly eat up a part of the property of others sinfully (2:188).” In the early Islamic era and subsequently up to the Middle Ages, the character building of the masses was emphasized to ensure justice, fair play with one another and the resultant harmony in society.

(ii) Fulfilling the Covenants and Paying Liabilities: In Kohran “And keep the covenant. Lo! Of the covenant it will be asked (17:34).” Business and financial contracts result in rights and liabilities of the parties and the liable party must fulfil the liability as per the agreement or the contract. Shariah emphasizes fulfilment not only of contracts but also promises or unilateral agreements. If the promisor does not fulfil the promise, the promisee has the right to recover the actual loss incurred by him due to the breach of promise.

(iii) Mutual Cooperation and Removal of Hardship: Islam cherishes that a person helps others in time of need and prohibits any such action that may cause any loss or harm to others. “Assist one another in the doing of good and righteousness. Assist not one another in sin and transgression, and keep your duty to Allah (5:2).” The holy Prophet encouraged mutual assistance. It is believed that mercy and sympathy towards each other are like one human body; if one of its organs suffers and complains, the entire body responds with insomnia and fever. In case of natural calamity, everybody used to contribute something until the disaster was relieved. Similarly, the principle was used in respect of a blood money payment; and the principle of reciprocal compensation and joint responsibility were well accepted by the Muslims.

(iv) Free Marketing and Fair Pricing: Islam provides a basic freedom of transactions, but exchange is permitted only when undertaken in permissible commodities and according to the rules and principles laid down by the Shariah. Fair prices are determined by the forces of demand and supply in the market by keeping in mind the input and production costs, storage, transportation and other costs, if any, and the profit margin of the trader. If the goods are traded below the cost, the producer will discontinue the supply of goods, which creates problems for others. Although Islam cherishes philanthropy, the state should not allow the creation of distortions: the second Caliph, Umar, asked a trader who was selling at less than the market price to raise the rate to the market level or leave the market. The state, however, always considers that its intervention or visible hands should not impair the condition of free competition.

(v) Freedom from Detriment: In the Islamic framework, rights and liabilities are much more strongly enforced for the disadvantaged party to reverse its position. The state and regulators try to ensure fair play and justice for all, and not to create hardship for the masses. If the regulators consider that the majority of investors are naive and irrational, they can take a paternal approach to protect them from the unhealthy practices of any of the market players, and publically provide necessary information about the nature of business activities. If a contract between two parties is detrimental to the interests of a third party, the latter may enjoy certain rights and options.

In sum, business ethics and norms are based on the Kohran and Sunnah, pursuing fair and justice to all business actors in the Middle Ages as well as present time. The state encourages free competition in the market, but intervenes in it for social justice and public welfare by giving more weight to the masses than individuals. It justifies heavy market intervention by the state.
Economic Thought of Ibn Al-Ghazali (1058-1111): Al-Ghazali was a Muslim theologian, jurist, philosopher, and mystic of Persian descent. Historian has referred him as the single most influential Muslim after the Islamic prophet Muhammad. “An overriding theme throughout his works is the concept of maslaha, or social welfare or utility (common good), a concept which encompasses all human affairs, economic and others, and which establishes close links between the individual and society. Indeed, one author has suggested that Ghazali discovered the hard-to-pin-down concept of a social welfare function that modern economists long for. Ghazali identified all matters in terms of whether they were masalih (utilities) or mafasid (dis-utilities) in promoting social welfare. He further defined the welfare function in terms of a hierarchy of individual and social needs. According to Ghazali, the welfare of a society depends upon the pursuit and preservation of five basic goals: 1 religion, comprehensively defined as a way of life; 2 life or soul; 3 family or progeny; 4 property or wealth; and 5 intellect or reason. He emphasizes that as per divine guidance, the goodness of this life and the Hereafter represents the key objective.”

“Ghazali considers the development of the economy as part of divinely ordained, socially obligatory duties: if these were not fulfilled, worldly life would collapse and humanity would perish. And he insists upon efficiency in such pursuits, for doing so is part of fulfilling one’s religious duties. Further, he identifies as part of one’s calling three reasons why one must pursue economic activities: first, self-sufficiency; second, the well-being of one’s family; and third, assisting others in need. Anything less would be religiously blameworthy. Ghazali criticizes those who would confine themselves to the acquisition of a mere subsistence level of living: if people stay confined to a subsistence level and become very feeble, deaths will increase, all work and industry will come to a halt, and society will perish. Further, religion will be destroyed, as the worldly life is the preparation for the Hereafter. Thus if subsistence living were the norm, human productive effort would suffer, in addition to society’s spiritual loss…Clearly Ghazali recognizes not only man’s desire to accumulate wealth but also his need to be prepared for the future. However, he warns that if the acquisitive spirit leads to greed and pursuit of personal whims, it is condemnable…How do income and wealth come about? Ghazali recognizes three sources: earnings through individual labor; profits from trading; and acquisitions of fortunes. He cites examples of the latter as through inheritance, finding a treasure, or receiving a gift. But he insists that sources of earnings must be religiously lawful and valid. He is critical of forced equality of income and wealth. To the extent possible, sharing of wealth must be voluntary, as part of one’s divinely ordained moral obligation toward others, rather than through the authority of the state.”
“Indeed, as a corollary, he suggests that if subsistence were the norm, rulers would force people to surrender what they viewed as beyond that and would become tyrants. Further, he is concerned about the administrative problems of collecting this surplus as well as its distribution. Without voluntary sharing, he argues, two blameworthy results will follow: extravagance by some, and miserliness by others. The former leads to evil deeds, the latter to the hoarding of money or keeping it idle and not spending, which is like the imprisonment of a public authority not allowed to perform its proper functions. Incidentally, he has little sympathy for those who, on faith alone, choose to be poor, or those who, without making efforts, attribute their misfortunes to the will of God. In a historical context it is useful briefly to point out that Ghazali’s scholarship, imbued as it was with his deep Islamic faith, assumes its greatest significance in relation to the larger philosophical-theological controversies of the time - between reason and revelation, between faith and skepticism. Extending beyond the inherited reservoir of Aristotelian logic, he challenged other Arab-Islamic scholars of his era, such as al-Farabi, Ibn Sina and Ibn Rushd, whose rationalistic interpretations of Aristotle threatened Islam itself. This challenge and his attempt at a reconciliation appeared in his treatise...Subsequently, as the translated works of the Arabic-Islamic Aristotelian rationalists reached medieval Europe, they even threatened the liquidation of Christian theology. Indeed, the list of 219 condemnations published in 1277 by Etienne Tempier, the bishop of Paris, was a clear manifestation of those fears. Thus, relying heavily on Ghazali’s works, St Thomas Aquinas was led to write his Summas to overcome that threat. And, since al-Ghazali placed science, philosophy, and reason in positions inferior to religion and theology, the Scholastics accepted his views, which became characteristic of most medieval philosophy.”

With above general perspective on his socio-economic outlook in mind, his specific economic concepts and principles can be considered by four main areas as follows.

(a) Voluntary Exchange and the Evolution of Markets: “Perhaps farmers live where farming tools are not available. Blacksmiths and carpenters live where farming is lacking. So, the farmer needs blacksmiths and carpenters, and they in turn need farmers. Naturally, each will want to satisfy his needs by giving up in exchange a portion of what he possesses. But, it is also possible that when the carpenter wants food in exchange for tools, the farmer does not need the tools. Or, when the farmer needs tools, the carpenter does not need food. So such situations create problems. Therefore, pressures emerge leading to the creation of trading places where various tools can be kept for exchange and also warehouses where farmers’ produce can be stored. Then, customers come to obtain these goods and markets are established. Farmers bring produce to the markets and if they cannot readily sell or exchange what they possess, they sell them at a lower rate to the traders who in turn store the produce and sell to the buyers at a profit. That is true for all kinds of goods... Then, such practices extend to various cities and countries. People travel to different places to obtain tools and food and transport them. People’s economic affairs...Ghazali thus clearly suggests the mutuality of economic exchange, which necessitates specialization and division of labor with respect to regions and resources. Further, he recognizes that trading activities add value to goods by making them available at a useful place and time. Motivated by participants’ self-interest, exchange leads to the creation of profit-motivated middlemen, or traders. Though accumulation of wealth in this manner was not viewed as among the noblest activities in the prevailing environment, he recognizes it as essential to the proper functioning of a progressive economy. Moreover, while discussing trading activities, he also mentions the need for safe and secure trading routes, and remarks that the state should provide protection so that markets can expand and the economy can grow. He shows a sound understanding of the interactions of demand and supply, as well as the role of profits as part of the divinely ordained scheme of things. He even provides a rather well-defined ethical code for the business community.”
(b) **Production Activities**: Since production of necessities is a social obligation, the state must assume the responsibility of ensuring that necessities are produced in sufficient quantities. He suggests productive activities with three categories: primary, secondary, and tertiary. 1 Basic industries: those which sustain human life. There are four subgroups: agriculture for food; textiles for clothing; construction for shelter; and activities of the state (including the provision of infrastructure), particularly for facilitating the production of necessities and for promoting cooperation and coordination among those engaged in production. 2 Ancillary activities: adjuncts to basic industries, such as iron industry, mineral exploration and development, and forest resources. 3 Complementary activities relating to basic industries, such as the grinding and baking of agricultural products.”  Given this classification, he believes that to ensure proper harmony of the socio-economic environment, all three groups must be active promoted and pursued. As stages of production and linkages, he views that “You should know that the plants and animals cannot be eaten and digested as they are. Each needs some transformation, cleaning, mixing, and cooking, before consumption. For a bread, for example, first the farmer prepares and cultivates the land, then the bullock and tools are needed to plough the land. Then the land is irrigated. It is cleared from weeds, then the crop is harvested and grains are cleaned and separated. Then there is milling into flour before baking. Just imagine—how many tasks are involved; and we here mention only some. And, imagine the number of people performing these various tasks, and the number of various kinds of tools, made from iron, wood, stone, etc. If one inquires, one will find that perhaps a single loaf of bread takes its final shape with the help of perhaps more than a thousand workers. Ghazali elaborates his argument by using the example of a needle, analogous to Adam Smith’s pin-factory example seven centuries later: even the small needle becomes useful only after passing through the hands of needle-makers about twenty-five times, each time going through a different process. He also offers insights as to specialization and interdependence within a family.”

(c) **Barter and Evolution of Money**: Ghazali views that “Creation of dirhams and dinars [gold and silver coins] is one of the bounties of God. All economic transactions are based on these two kinds of money. They are metals, with no benefits in themselves. However, people need them, to exchange them for different things - food, clothing, and other goods. Sometimes a person needs what he does not own and he owns what he does not need. For example, a person has saffron but needs a camel for transport and one who owns a camel does not presently need one but he wants saffron. However, there must be a measure of the two objects in exchange, for the camel-owner cannot give the whole camel for a quantity of saffron. There is no similarity between them so that equal amount of that weight and form could be given. These goods have no direct proportionality so one cannot know how much saffron will equal a camel’s worth. Such barter transactions will be very difficult. Various goods such as these need a medium which could rule justly and determine their value in exchange. When their place and grades are ascertained, it is possible to distinguish which ones are equal to each other and which are not. So it is said a camel is, say, equal to 100 dinars and this much quantity of saffron is worth 100 dinars. Since each is equal to a given amount of dinars, the two quantities are equal to each other. But those dirhams and dinars are not needed for themselves. They are created to change hands and to establish rules for exchange with justice and for buying goods which have usefulness. A thing (such as money) can be exactly linked to other things if it has no particular form or feature of its own - for example, a mirror has no color but can reflect all colors.” Ghazali is clearly pointing out here the problems of a barter system: “first, lack of a common denominator; second, indivisibility of goods; and third, the problem of double coincidence of wants. Although exchange can take place through barter, differences in the characteristics of goods make it inefficient. Indeed, the choice of various examples manifests Ghazali’s keen understanding of barter problems.”
(d) **The Role of the State and Public Finances**: Ghazali considers “the state to be a necessary institution, not only for the proper functioning of society’s economic affairs but also for the fulfillment of divinely ordained social obligations: The state and religion are inseparable pillars of an orderly society. Religion is the foundation, and the ruler, representing the state, is its promulgator and protector, if either pillar is weak, society will crumble. He adds that man’s inability to fulfill all his needs alone persuades him to live in a civilized society with cooperation; but tendencies like jealousy, competition, and selfishness can create conflicts. Therefore, some collective arrangement becomes necessary to check those tendencies…Ghazali emphasizes that in order to promote economic prosperity, the state must establish justice, peace and security, and stability. Stressing the need for justice, and “just and equitable rule”, he says: Where injustice and oppression are present, the people have no foothold; the cities and localities go to ruin, the inhabitants flee and move to other territories, the cultivated lands are abandoned, the kingdom falls into decay, the public revenues diminish, the treasury becomes empty, and happiness and prosperity fade among the people. The subjects do not love the unjust ruler, but always pray that evil may befall him. He stresses that the state must adopt all necessary measures to establish conditions of internal and external security: The army is needed to defend and protect people from robbers. There should be a judiciary for settlement of disputes; laws and rules are needed to check people’s conduct and for social stability…These are necessary government functions which can be undertaken by specialists only; and when they engage in these activities, they cannot be spared for other industries and they need support for their livelihood. On the other hand, people need them because if all engaged in defense, then other industries would suffer and if military men engaged in industries for their livelihood, the country would lack defenders and people would be victimized. Thus Ghazali holds the state responsible for establishing the proper conditions.

**In conclusion**, “it is fair to say that perhaps more than any other Arab Scholastic of the era, Ghazali achieved a clear understanding of the operation of a voluntary-exchange economic system, albeit within the larger theological framework which viewed all human behavior in teleological terms. He left behind a rich legacy of economic thought upon which, through transference and translations, much more could be built by his successors. His influence on European intellectual developments is widely acknowledged: Europe as well as the Muslim East felt the impact of Al-Ghazali’s teaching. Echoes of his voice are heard in the reflections of Blaise Pascal, and his work was paralleled by Thomas Aquinas in the discourse on Christian doctrine and in other portions of the *Summa Theologica*. Such “paralleling” (the field of economics included) becomes obvious from a rather cursory comparison of Aquinas’ works with those of Ghazali. To the discomfiture of Schumpeter’s “Great Gap” notion, substantial evidence points to Ghazali’s great impact on European Scholastics, especially Aquinas. His “teaching is quoted by St. Thomas and other Scholastic writers”, and it is generally known that Aquinas “was deeply influenced by Muslim philosophers, chiefly al-Ghazali” It has been suggested that Aquinas’ *Summa Theologica*, the chief source of Thomistic economics”, was “an attempt to harmonize Christianity with Aristotelian philosophy. It seems fair to assert that such “harmonization” was significantly facilitated by the Arab-Islamic version of that philosophy, as developed by Ghazali particularly. Clearly Ghazali must be acknowledged as a distinguished pioneer of modern economic thought, with several predecessors as well as successors, deserving at least as much disciplinary recognition as Aquinas, the best known of medieval Europe’s Scholastics.”73 Ghazali’s scholarship extended to many diverse fields of learning. His writings…emphasized the holistic intellectual approach. “While there have been other studies on his works, to the best of our knowledge, none has investigated his contributions to economics, especially on the basis of a detailed scrutiny of his original Arabic-language writings. The present paper attempts to fill that void.”74
Economic Thought of Ayatullah Taleghani (1911-78) was an Iranian theologian, Muslim reformer, democracy advocate and a senior Shia cleric of Iran. “Taleghani was a contemporary of the Iranian Revolutionary leader Ayatollah Ruhollah Khomeini and a leader in his own right of the movement against the secularist Shah Mohammad Reza Pahlavi. A founding member of the Freedom Movement of Iran, he has been described as a representative of the tendency of many Shia clerics to blend Shia with Marxist ideals in order to compete with leftist movements for youthful supporters during the 1960s and 1970s. His greatest influence has been said to have been in his teaching of Quranic exegesis, as many later revolutionaries were his students.”

He wrote the *Islam and Ownership*, which was translated into and published in English in 1982 under the title of *Society and Economics in Islam*. It seems to be significant to understand the principles of Islam economics through this book, the main ideas of which are summarized below.

(i) “Islam recognizes individuals as owners of the fruits of their labor in the widest possible sense and as free agents in transactions, within the frame-work of the relevant ordinances. Beyond these limits, as regards public capital and the regulation of exchange within the public sphere, it is the ruler who functions in some cases as owner, and in others as supervisor. From this standpoint, Islamic economics is based neither on the unlimited freedom of private ownership that leads to unbridled capitalism, nor on the public ownership that results in the total denial of individual ownership and freedom…Islam sets bounds upon private, public, and collective wealth that accord with human nature and a just system, as well as with every aspect of people’s rights. There is private ownership based on the innate and natural freedom of individuals, and collective ownership based on public resources and interests. At present, both capitalism and collectivism dispense with their underlying principles in practice.”

(ii) “In the view of Islam, property ties and economic relationships are bound up with the pattern of thought and with human sentiments and instincts; the social milieu reflects the totality of these ties. Since the economics of Islam comprises the determining and delimiting of these ties for the sake of the amelioration of economic relationships, it is an economics inseparable from an intellectual and moral orientation and training and from religious and social ordinances. Although the relationship may not be evident between intellect and emotions on the one hand, and the rights of individuals on the other, it is a relationship with invisible roots in the human psyche; they inter-penetrate and interact in our secret depths. People’s manners of envisioning these ties and relating themselves to them differ with the goals in life they distinguish and come to believe in. These differences change the form of relationships…The threads of people’s ties with each other and with other beings are similarly involved and delicate. Those who imagine or believe that by considering one tie, one independent thread, such as that of economic relationships, they have discerned all of society’s ill and aberrations and pointed out their cure bear some resemblance to those magicians, enchanter, and snake-charmers…Islam sees the determination of the limits of rights and ties as related to the orienting of attitudes, the strengthening of belief, and the nurturing of conscience and human values. It sets forth economic ordinances and laws conforming with these principles that are in such close harmony that only in the recesses of clearest thought and intellectuality can their limits and individual qualities be discerned.”
(iii) “The limits of ownership and economic relationships in Islam are delineated and ordered by three principles: 1) individuals, 2) ordinances, and 3) government. Mature individuals governed by faith and having moral responsibility are free to dispose their property as they are free in other matters; they may possess and profit from properties not subject to the claims of others. At the level of commerce, this freedom becomes limited by the principle that the right of ownership arises from work, and by the bounds set by religious ordinances and the conditions for sound transactions. Islamic government, which belongs to the figure variously known as the Imam, Vali, or Khalifa, or which derives its authority from him, has priority in disposing property and exists, moreover, to establish equity, therefore, for the sake of public welfare and the precedence of public interests over private ones (where the rights of the individual and those of society are in conflict), it is empowered to limit individual ownership to a greater degree than the law may authorize. The right of precedence of the Imam and of those persons entrusted with authority in disposition in general is based on their power to distinguish public welfare from accepted rights, and certain scriptural references such as “…that it not circulate among the wealthy among you…” (59.7), as well as the rule [from a hadith], “There is no detriment of detrimental action in Islam,” establish the ruler’s right to regulate property matters as foremost among his prerogatives.”

(iv) “Islam envisions distribution, like production, as the natural and innate right of the one whose labor is involved, such that the individual is free to choose his labor, and labor is the source of the right of ownership. One of the consequences of this right is that the owner is free to dispose and distribute his product and property. The limits and legal restraint on the rights of disposition and ownership, along with the general supervision of the ruler, secure the ordering and delimiting of distribution and prevent unlimited profits. Given this delimitation and supervision, why shouldn’t this right be made over to its original holder, whose labor is involved? As has been said, it is unnatural that the product of labor and the fruits of the labor of individuals created free be placed at the disposal of the capitalist or the state. While these powers do oil the factory machinery and ready it to run, they also seize on various deceitful pretexts to restrict individuals’ means of livelihood and rob them of their freedom, independence, and very identity, things, more precious than all else. If the labor and owner does not have freedom of disposition and distribution, if distribution is restricted to the needs of the laborer, individual laborers have no stronger motive to produce than need.”

(v) The right to the ownership and distribution of products made from natural resources is based on the right to the disposition and distribution of natural resources, so as to ensure that the earth and all its natural resources belong to everyone. “The state, the guardian and representative of the general welfare, has the rights of supervision and distribution. At the next level, each person, to the extent that he engages in cultivating land, extracting raw minerals from the earth, and gathering such natural movable properties as surface rock, running waters, and marine and land animals, acquires a right to the property in question. As long as these categories and relations persist, individuals will retain these rights. These rights are upheld only insofar as they do not injure the general welfare, because resources and materials in their natural state belong to the public, and the private right to dispose them is limited by the public right to them. This, should someone have more than the usual means and opportunities, the law of public ownership and the power of the government limit the amount of cultivation, extraction, and gathering he can do, and prohibit their abuse. Therefore, direct distribution of natural resources is on the basis of the source of production and the mode of production; at the next stage, the distribution of products [made from natural resources], which is the prior right of the owner, is regulated. From this stand point,
the distribution of products is not a separate matter from the distribution of natural resources, to be considered independently and compared with it. The reason is that the productive act is not confined to obtaining natural resources and preparing goods, but encompasses subsequent useful acts such as making the goods available to those in need of them. The rights of middlemen must also be taken into consideration. Thus, to the extent that exchanges (in commerce and trade) are based on useful work, the rights of middlemen (merchants and tradesmen) are natural and lawful. Although Islamic ordinances have allowed for the natural rights of middlemen, they have prohibited exchanges in which no useful act is performed...Given this kind of limited freedom of exchange, and the government inspection of goods, the principle of supply and demand – in the capitalist sense – cannot govern exchanges, because demand, in capitalist usage and actuality, is a function of purchasing power and monetary wealth. According to Islamic jurisprudence, however, demand arises from need. Accordingly, goods are offered and made available to the extent required to satisfy the necessities of life. The market is not to become the plaything of greed, as it is under capitalism, where the way is open to pseudo-needs and oppressive profiteering.»

(vi) "Islamic economics is based on the principles of truth and justice rather than the interests of a particular group or class. According to Islam, class distinctions do not appear because of a perennial psychological law or sociological necessity. The appearance of classes is the result of individual and social deviations from the principles of truth and justice, and the strengthening of attitudes corresponding to transgression, exploitation, and imperialism. The form of society indicates the relationships of individuals, which in turn express their thoughts and morals. As the character of individuals’ thoughts and spirits changes, social relations and the character of society change correspondingly: ‘Truly God will not change a people’s lot until they change what is in their souls...’ (13:11). That in the course of history we witness the emergence of successive classless societies, large or small, under a variety of circumstances, proves beyond dispute that the appearance of classes is not a historical necessity. That all groups seek resource to truth and justice in dealing with one another and regard their own outlook as having universal validity proves that truth and justice have an actuality and that what is relative and mutable are only the criteria and methods of implementation that prevail...Any person of insight who undertakes a careful study of the body of Islamic laws and ordinances will realize that they are not based on, nor do they arise from, the class environment; they do not benefit one class to the disadvantage of another. They are based solely on the principles of the truth and justice; the corrupt contexts of feudalism, capitalism, and slavery did not influence their codification.»

In sum, the limits of ownership and economic relationships in Islam are delineated and ordered by three principles: individual, ordinances, and government. Individuals governed by faith and having moral responsibility are free to dispose their property as they are free in order matters; they may possess and profit from properties not subject to the claims of others. This freedom is limited by the principle and by the bounds set by religious ordinances. Islamic government limits individual ownership to establish equity for the sake of public welfare. The individual is free to choose his labor, and labor is the source of the right of ownership; and the owner is free to dispose and distribute this product and property. Exchanges in commerce are based on useful work, and the rights of middlemen are natural and lawful. Islamic ordinances, however, have prohibited exchanges in which no useful act is performed: “Do not squander your possessions on nullity.” since human greed could corrupt the economy and cause chaotic relationship in society. Kohran and Sunnah reveal that “Islam has accepted the law of demand and supply as a principle but has subjected it to some limitations to avoid any moral and social ills and problems. The Islam state intervenes in the market to create harmony between individuals and social benefits and to establish social justice, although the border line for the balance of goals is not clear.
The intellectual heritage descended and was transformed through the family, the Church, and the school from generation to generation. The school system of the Roman Empire decayed by external invasions and the depopulation of towns; and a few lay schools survived in Italy in the sixth century, and the rest were mostly schools for training of converts and prospective priests. The attitude of the Church towards education reflected on that Christian theologians were hostile to secular culture of the time: the Church paid attention to moral training by religious doctrine rather than to intellectual cultivation or the transfer of knowledge. The educational reform of Charlemagne in about 800 opened schools for general education of boys and girls at cathedrals, monasteries, parish churches, and convents; where the students learned the seven liberal arts as pre-university education. In the so-called Benedictine Age from the time of Charlemagne to the eleventh century, European education was mainly in the hands of monks. As Europe began to recover from wars in about 1000, order and peace revived intellectual activities, which solidified the academic basis toward the twelfth century renaissance. Like the papacy and the empire of the time, the university was an institution owing not only to its primitive form and traditions but also to its circumstances so that its origin can only be explained by environmental changes.

The rise of population and the expansion of industry and commerce expedited scientific and theoretical education rather than education aiming at practical utilities. The change of society in Italy, France, and England required higher education in theory and practice such as in theology, law, medicine, and certain fields of liberal arts at the universities; and existing private schools were transformed into universities from the confluence of various factors. The university was a school generally representing all the branches of knowledge, but medieval documents reveal that the word university means merely a number of or aggregate persons applied to “a particular kind of guild or corporation” such as a guild or an association of masters or of students. The jurists used the term universitas as all kinds of community or corporation, and the term stadium generale as an institution of higher education founded on and confirmed in its status by the pope or the king. As a scholastic guild of masters or students, the university was established in Bologna in 1088 and Paris in 1206. Paris supplied the model for the universities of masters, Bologna for the universities of students and the French universities are mostly children of Bologna rather than of Paris, and that the Scottish universities are more closely affiliated to Bologna than to Paris or Oxford.

The development of universities was differently expected by church and crown. The popes were interested in the universities to strengthen the position of an intelligible doctrine against heresies, to integrate the papal power against the earthly powers, and to recruit persons who could serve as the staff for their offices; while the kings, dukes, and princes expected the universities to provide intellectual capacity to consolidate political institutions. The social role of the medieval university consisted primarily of training for more rational forms of the exercise of authority in church, government, and society. The courses of study, examinations, and degrees obtained from the universities only certified the qualification in the specialized field of the license, and were not oriented to provide any occupations other than those of university teachers. Although academic degrees did not entitle the practice of any particular profession, studies at a university was so attractive to those who wished to engage in such activities that it became a mark of social distinction by the end of the Middle Ages. Arts, science, and literature, though restrained by religious doctrine, were narrowly developed by undisturbed thought and feeling, which became a prelude of the Renaissance and the Reformation. The section reviews general patterns, structures, students, learning of the European universities, and then investigates the development of major universities in Italy, Spain, France, Germany, Low Countries, and England.
Chapter IV. Economic Thought and Other Intellectual Developments

Map IV-5-1. Medieval Universities, Europe
The Transmission of Knowledge: (a) The Rise of the Vernaculars: After the fall of Rome in 476, the Church maintained a Roman heritage in ritual, sermons, and schools – an international language intelligible to all the literate population of Italy, Spain, France, English, Scandinavia, the Lowlands, Germany, Poland, Hungary, and the western Balkans. “Educated men in these countries used Latin for correspondence, business records, diplomacy, law, government, science, philosophy, and nearly all literature before the thirteenth century. They spoke Latin as a living language, which almost daily developed a new word or phrase to denote the new or changing realities or ideas of their lives. They wrote their love letters in Latin, from the simplest billets-doux to the classic epistles of Heloise and Abelard. A book was written not for a nation but for the continent; it needed no translation, and passed from country to country with a speed and freedom unknown today. Students went from one university to another with no thought of linguistic embarrassments; scholars could lecture in the same language at Bologna, Salamanca, Paris, Oxford, Uppsala, and Cologne. They did not hesitate to import new words into Latin… Nevertheless, the disruption of international intercourse by the collapse of Rome, the introverting poverty of the Dark Ages, the decay of roads and the decline of commerce, developed in speech those variations which segregation soon expands. Even in its heyday Latin had suffered national modifications from diversities of climate and oral physiology. In its very homeland, the old language had been changed. The abdication of literature had left the field to the vocabulary and sentence structure of the common man, which had always been different from those of the poets and orators. The influx of Germans, Gauls, Greeks, and Asians into Italy brought a multiformity of pronunciation; and the natural laziness of tongue and mind sloughed off the precise inflections and terminations of careful speech.”

Dialects had diverged in Spain, Franc, and Germany. Italy formed her vernacular more slowly than Spain and France. “Latin was her native speech; the clergy, who spoke Latin, were especially numerous in Italy; and the continuity of her culture and her schools kept the language from changing so freely as in lands with broken traditions. As late as 1230 St. Anthony of Padua preached to the common people in Latin; however, a Latin sermon delivered at Padua in 1189 by a visiting prelate had to be translated by the local bishop into the popular tongue…Even so about 1300, he hesitated between Latin and the Tuscan dialect as the language of The Divine Comedy. By the narrow margin of this choice, he escaped oblivion.”

“While Latin was dividing reproductively into the Romance languages, Old German was splitting into Middle German, Frisian, Dutch, Flemish, English, Danish, Swedish, Norwegian, and Icelandic. Old German is merely a convenient phrase to cover the many dialects that exercised their tribal or provincial sovereignty in Germany before 1050…Old German passed into Middle German (1050-1500) partly through the influx of new words with the coming of Christianity. Monks from Ireland, England, France, and Italy labored to invent terms to translate Latin. Sometimes they appropriated Latin words bodily into German – Kaiser, Prinz, Legende. This was legitimate thievery; tragic, however, was the influence of Latin sentence structure – keeping the verb to the end – in changing the once simple syntax of the German people into the stiff, inverted, and breath-taking periods of the later German style. Perhaps the finest German was the Middle High German written by the great poets of the thirteenth century…The Teutonic speech of the Angles, Saxons, and Jutes went with them to England in the fifth century, and laid the foundations of the English language – gave it almost all its short and racy words. French flooded the land with the Normans, and ruled the court, the courts, and the aristocracy from 1066 to 1362, while Latin continued to preside over religion and education, and remained de rigueur in official documents. Thousands of French words entered into English, above all in costume, cookery, and law; half the terminology of English law is French. For three centuries the literatures of France and England were one; and as late as Chaucer the spirit and language of English were half French.”
(b) The World of Books: From the fifth century, the conquered barbarians adopted the Latin alphabet, and wrote it with a cursive or running hand that bound the letters together and gave most of them a curved form instead of the straight line. “Writing was upon parchment, papyrus, bellum, or paper, with quill or reed pens using black or colored inks. Papyrus disappeared from common use in Europe after the Islamic conquest of Egypt. Vellum, prepared from the skin of young lambs, was expensive, and was reserved for luxurious manuscripts. Parchment, made from coarse sheepskin, was the usual medium of medieval writing. Till the twelfth century paper was a costly import from Islam; but in 1190 paper mills were set up in Germany and France, and in the thirteenth century Europe began to make paper from linen. Many parchments were scraped to erase an old manuscript and receive a second composition. Old works were lost by such erasures, by misplacement of manuscripts, by war and pillage, by fire or decay. Huns sacked monastic libraries in Bavaria, Northmen in France, Saracens in Italy. Many Greek classic perished in the plunder of Constantinople in 1204. The Church had a first discountenanced the reading of the pagan classics; in nearly every century some fearful voice – Gregory I, Isidore of Seville, Peter Damian – was raised against them; Theophilus, Archbishop of Alexandria, destroyed all pagan manuscripts that he could find; and Greek priests, according to Demetrius Chalcondylas, persuaded Greek emperors to burn the works of the Greek erotic poets, including Sappho and Anacreon. But in those same centuries there were many ecclesiastic who cherished a fondness for the old pagans, and saw to it that their works were preserved. In some cases, to disarm censure, they read the most Christian sentiments into pagan poetry, and by genial allegory turned even Ovid’s amatory art into moral verse. An abundant heritage of classical literature was preserved by monastic copyists…Second only to the monks as copyists were private or professional scribes, who were engaged by rich men, or by booksellers, or by monasteries.”

“The medieval Church exercised no regular censorship over the publication of books. If a book proved both heretical and influential, like Abelard’s on the Trinity, it would be denounced by a Church council. But books were them too few to be a prime peril to orthodoxy. Even the Bible was rare outside of monasteries; a year was required to copy it, a year’s income of a parish priest to buy it; few clergymen had a full copy. The New Testament, and special books of the Old, had a wider circulation. Bibles of great size, magnificently decorated, were produced in the twelfth century; they could be handled only on a reading desk, usually in a monastic library, and might be chained to the desk for better preservation…But in general, before the fourteenth century, the Church was not opposed to Bible reading on the part of the laity.” The size of a book and its pages was determined by the size of the available skins. An ordinary volume cost was $160 to $200 in U.S. dollar value of 1949. “The cost of books, and the dearth of funds for schools, produced a degree of illiteracy which would have seemed shameful to ancient Greece or Rome. North of the Alps, before 1100, literacy was almost confined to clerics – clergymen, accountants, scribes, governmental officials, and professional men. In the twelfth century the business classes must have been literate, for they kept elaborate accounts. In a household a book was a precious thing. Usually it was read aloud to several listeners; many later rules of punctuation and style were determined by convenience for oral reading. Books were carefully exchanged from family to family, monastery to monastery, country by country. Libraries, though small, were numerous. St. Benedict had ruled that every Benedictine monastery should have a library…Papal library began with Pope Damasus (366-84)…The universities began to have libraries in the twelfth century….There were, here and there, private libraries. Even in the darkness of the tenth century, we find Gerbert collecting books with true bibliophile passion…In twelfth century, Europe discovered the wealth of Spain in books; scholars descended upon Toledo, Cordova, and Seville; and a flood of new learning poured up over the Pyrenees to revolutionized intellectual life.”
(c) The Translators: Medieval Europe, partly united by a common language, was still divided into Latin and Greek halves, mutually hostile and ignorant. The Latin heritage, except of law, was forgotten in the Greek East; the Greek heritage, except in the Sicilies, was forgotten in the West. “Part of the Greek heritage was hidden beyond the walls of Christendom – in Moslem Jerusalem, Alexandria, Cairo, Tunis, Sicily, and Spain. As for the vast and distant world of India, China, and Japan, long rich in literature, philosophy, and art, Christians, before the thirteenth century, knew almost nothing. Some of the work of linking the diverse cultures was performed by the Jews, who moved among them like fertilizing subterranean streams. As more and more Jews migrated from Moslem realms into Christendom, and lost knowledge of Arabic, their scholars found it desirable to translate Arabic works (many written by Jews) into the only language generally understood by the savants of the scattered race – Hebrew…Many Hebrew translations from the Arabic were rendered into Latin; so a Hebrew version of Avenzoar’s *Taysir, or Aid to Health*, was turned into Latin at Padua (1280). Early in the thirteenth century a Jew translated the entire Old Testament directly and literally into Latin...The main stream whereby the riches of Islamic thought were poured into the Christian West was by translation from Arabic into Latin. About 1060 Constantine the African translated into Latin al-Razi’s *Liber Experimentorum*, the Arabic medical works of Isaac Judaeus, and Hunain’s Arabic version of Hippocrates’ Aphorisms and Galen’s Commentary. Most of the translators were Jews who knew Arabic, Hebrew, and Spanish, sometimes also Latin. The busiest member of the group was a converted Jew, John of Spain, whose Arabic patronymic, ibn Daud, was remodeled by the Schoolmen into Avendeath. John translated a veritable library of Arabic and Jewish works by Avicenna, al-Ghazali, al-Frabi… and al-Khwairizmi; through this last work he introduced the Hindu-Arabic numerals to the West. Almost as influential was his rendering of a pseudo-Aristotelian book of philosophy and occultism, the *Secretum Secretorum*, whose wide circulation is indicated by the survival of 200 manuscripts.”

“Next to Spain as donor in this transfusion of culture was the Norman kingdom of the Sicilies. Soon after their conquest of island (11091) the Norman rulers employed translators to turn into Latin the Arabic or Greek works on mathematics and astronomy then current in Palermo. Frederick II, at Foggia, carried on the work, and partly for that purpose brought to his court one of the strangest and most active minds of the early thirteenth century. Michael Scot derived his cognomen from his native Scotland. We find him at Toledo in 1217, in Bologna in 1220, in Rome in 1224-7, thereafter at Foggia or Naples. His first important translation was al-Bitruji’s *Sphairics*, a critique of Ptolemy. Fascinated by discovering the scope and freedom of Aristotle’s thought, Scot translated into Latin, from Arabic versions, the *History of Animals*, including *On the Parts of Animals* and *On the Generation of Animals*; and an unverified tradition ascribed to him translations of the *Metaphysics*, the *Physics*, *On the Soul*, *On the Heavens*. All the Latin translations, so far mentioned, of Greek science and philosophy were made from Arabic versions – sometimes from Arabic versions of Syriac versions – of the already obscure originals. They were not as inaccurate as Roger Bacon charged, but there was clearly need of more direct renderings…in 1166 he (Eugene) share in a Latin translation of the *Almagest* directly from the Greek…By 1280 Aristotle had been almost completely transmitted to the Western mind.”

The effects of all these translations upon Latin Europe were revolutionary. The influx of texts from Islam and Greece profoundly stirred the reawakening world of scholarship. Compelled new developments in grammar and philosophy, enlarged the curriculum of the schools, and shared in the astonishing growth of universities in the twelfth and thirteenth centuries.” It was more important that algebra and the decimal system entered the Christian West through these versions; that the theory and practice of medicine were powerfully advanced; that Greek-Arabic astronomy compelled an expansion of theology, followed by many other revolutionary changes.
(d) **The Schools.** The family, the Church, and the school were essential for the transmission of culture from generation to generation. "Moral education was stressed in the Middle ages at the expense of intellectual enlightenment, as intellectual education is today stressed at the expense of moral discipline. In England it was not unusual, in the middle and upper classes, to send a boy of seven or so to be brought up for a time in another home, partly to cement family friendship, partly to offset the laxity of parental love. The splendid school system of the Roman Empire had decayed in the tumult of invasion and the depopulation of the towns. When the tidal wave of migration subsided in the sixth century a few lay schools survived in Italy; the rest were mostly schools for training converts and prospective priests. For some time (500-800) the Church gave all her attention to moral training, and did not recon the transmission of secular knowledge as one of her functions. But under the prodding of Charlemagne cathedrals, monasteries, parish churches, and convents opened schools for the general education of boys and girls. At first the monastic schools bore nearly all this burden. A *schola interior* provided instruction of novices or oblates, and a *schola exterior* offered education to boys, apparently without charge. In Germany these monastic schools survived the disorders of the ninth century, and shared productively in the Ottonian Renaissance; in the ninth and tenth centuries Germany led France in the grace of the mind. In France the disintegration of the Carolingian house, and the raids of the Northmen, struck cruel blows at the monastic schools. The palace school that Charlemagne had established at the Frank court did not long outlive Charles the Bald…when the Norse raids subsided the bishops and secular clergy were richer than the abbots and the monasteries; and while the monastic schools declined in the tenth century, cathedral schools rose…In England the cathedral school of York was famous even before it gave Alcuin to Charlemagne. The school of Canterbury became almost a university, with an abundant library…The decretals of Pope Gregory IX (1227-41) directed every parish church to organize a school of elementary instruction."

Most convents maintained schools for girls, but these schools probably reached only a modest percentage of girls. Some cathedral schools admitted girls. Abelard speaks of the women of noble birth who attended his school at Notre Dame in Paris in 1114. On calculation recon the number of boys in elementary schools in England in 1530 at 26,000 in estimated population of 5,000,000 that is one thirtieth of the proportion in 1931. Normally the cathedral school was directed by a canon of the cathedral chapter, and the teachers were clerks in minor orders. The curriculum began with the *trivium* – grammar, rhetoric, logic – and passed on to the *quadrivium* – arithmetic, geometry, music, astronomy; these were the seven liberal arts, which is framed by Martianus Capella, a North African scholar of fifth century, in a widely used pedagogical allegory *On the Marriage of Philosophy and Mercury*, which barred medicine and architecture. "In medieval schools, it began with the Psalms, passed to other books of the Bible, then to the Latin Fathers, then to the Latin classics – Cicero, Virgil, Horace, Statius, Ovid. Rhetoric continued to mean the art of speaking, but again included considerable study of literature. Logic seems a rather advanced subject for the trivium, but perhaps it was good that students should learn to reason as early as they loved to argue. The economic revolution brought some changes in the educational scene. Cities that lived by commerce and industry felt a need for employees with practical training; and against much ecclesiastical opposition they established secular schools in which lay teachers gave instruction in return for fees paid by the parents of the pupils. In 1300 the fee for a year in a private grammar school in Oxford was four or five pence. Villani in 1283 reckoned 9000 boys and girls in the church schools of Florence, 1100 in six abacus schools that prepared them for a business career, and 575 pupils in secondary schools. Secular schools appeared in Flanders in the twelfth century; by the second half of the thirteenth the movement had spread to Lubeck and the Baltic cities…The secularization of education was on its way."
Chapter IV. Economic Thought and Other Intellectual Developments

(e) Universities. The university was “a product and shaper of society of the twelfth century, not only in its organization but also in the privileges and protection it received from Pope and Kings. But situation is different with regard to the colleges.” In the supply side, with the unceasing advance of human striving of knowledge, there were “the substantial increase in the number of independent teachers in the twelfth century and the successful struggle of scholars, who had achieved self-consciousness, for the recognition of their rights and privileges.” In the demand side, “Schools and higher educational institutions are founded in order to train the persons who are needed to maintain the ruling class domination” of the nobility as well as the clergy. Moreover, “the stimulus to the emergence and growth of universities was scholarly and scientific interest, the desire to learn and to know, the amor scientiae.” It is also believed that “There are two things which drive men hard to the study of jurisprudence; these are the pursuit of offices and the vain passion for fame.” As another view of the origins of universities lies in that “The schools of the twelfth century and the universities of the thirteenth century never set themselves the goal of providing the courts and municipalities with specialized experts. Nevertheless, the new social pattern which took form in the university was in part shaped by society. Since it was the lively interest of wider social groups which made it possible for the higher schools to become enduring and independent institutions. From the very beginning, education was subject to the tension between the fundamental and primary impulse to seek the truth and the desire of many persons to acquire practical training. Conversely, without really wanting to do so, the schools formed the new academic stratum and changed the whole structure of society, enriching it and making it more complex.” The university could have arisen only in the particular economic, political, and social circumstances obtaining in certain cities of Europe in the early Middle Ages.

There were expectations of church, crown, and municipalities. It is expressed that scholarship enriches knowledge and gives stability to the social order. On the one hand, the popes were interested in the universities for three reasons: they wished to strengthen the position of a rationally intelligible doctrine amid the diverse and mutually contradictory beliefs of the various religious orders and scholars, they were particularly concerned to carry on a battle against the expanding heresies; they were desirous of strengthening the central powers of the papacy against the claims and aspirations of the earthly powers and the regional feudal interests; and they were also concerned with the recruitment of persons who could serve as the staff for their office. “The curia had acknowledged, as early as the twelfth century, the value of scholarly education for the solution of the dogmatic and legal problems of a consistent ecclesiastical policy. Scholars became cardinals.” On the other hand, the emperors such as Henry IV were “more interested in the provisions of Roman law which strengthened their fiscal and political powers and they adopted them obviously with enthusiasm. Scholarship and scholars fulfilled such and similar expectations of earthly and ecclesiastical authorities before universities existed.” “The kings of France, England, and Spain, and later Portugal, Austria, Bohemia, Poland, and Hungary, as well as, following their example, dukes and princes, expected of their universities effective intellectual and individual institutions which they needed to overcome the centrifugal forces embodied in the landed and urban aristocracies. It is true that they often justified their founding of universities by reference to their concern for the young persons of their realms, whom they wished to save from the costly and burdensome alternative of studying abroad. But they were, in fact, much more concerned to associate them with their own territorial policies, as happened in extreme form in the case of Frederick II’s foundation of University of Naples in 1224 and his attempt to dissolve the University of Bologna. His prototype of a state university collapsed after five years and became a widespread institutional model only three centuries later. From the late thirteenth century on, the big commercial towns were interested in establishing universities.
What did scholars and students expect of university? “The social role of the medieval university consisted primarily of training for more rational forms of the exercise of authority in church, government, and society. This seems to contradict the fact that the courses of study, the examinations, and the degrees were not oriented to the provision of any training for occupations other than those of university teachers. The bachelor’s degree as the culmination of the first stage of academic training certified nothing beyond that capacity and the right to serve as an apprentice in the art of teaching in a particular field under the supervision of a magister. The master’s and doctor’s degrees testified to the capacity and, as implied by the licentia ubique docendi, the formal right to deliver independent academic lectures, as well as, in many universities, the obligation to deliver such lectures in one’s own faculty for a period of at least two years. Thus, university teachers became a status group which transcended local and disciplinary boundaries and which possessed a distinctive corpus of knowledge and enjoyed a high degree of prestige; they came to conceive of themselves as a university elite with their own ethos appropriate to their status, and they were also accepted as such by society and its rulers. Symbolically, this internal university arrangement of academic qualification has persisted, as a reminder of its medieval origin, in the convocation at the University of Oxford, the highest governing organ of the university. It still comprises the teaching staff but it also includes the recipients of the degrees of masters of arts and doctors of theology, law, and medicine who are not active as members of the university as well as those recipients of other academic degrees who apply for it. Nowadays, the powers of this body are limited mainly to the election of the chancellor and of a professor poetry.”

In the fifteenth century, “the academic degree was recognized as evidence of scholarly qualification to such an extent that it became important in the competition for appointment to ecclesiastical and secular posts.” The class of the degree was also taken into account to fill pulpits and offices.

Origins and limits of faculty organization: “In Paris in 1213, the chancellor issued the Magna Charta of the university; in 1231, it was incorporated in the bull Pärens scientiarum by Pope Gregory IX. It confirms the obligation of the chancellor to obtain the vote of the professors in matters connected with appointments for the teaching of theology and canon law; there had to be a collegial examination of candidates for appointment as university teachers...a person could become a student only in so far as he attached himself to a particular teacher...to assess the performance of his pupils. Henceforward, the teacher had to present his pupil to the colleagues in his discipline and the latter had to decide whether they should recommend to the chancellor the award of the licentia docendi and the acceptance of the pupil as a colleague. This could only be done once there was proof of the candidate’s blameless mode of life and his progression through a proper course of studies.”

“Collegial responsibility for decision requires a minimum of common criteria for proper collegial behavior as well as for the substance and procedure for reaching decisions. The examination for an ordered course of study was necessarily dependent – as it still is today – on a set of regulations which specified the required minimal period of study and the substance to be covered for each degree within each faculty. These regulations also specified rights and obligations of the teaching corps.” The medieval classification of sciences made distinctions between liberal and mechanical arts, but the technological disciplines were excluded from the teaching program except medicine. Thus, the medieval universities in Europe was an engine of intellectual progress, which is analyzed by three parts in this section. First of all, rising patterns of early universities are reviewed; second, authorities, management, and teachers of the universities are analyzed; and third, students and four faculties of learning in the universities are examined in line with admission, graduation, student life, and studies such as in some limited fields of liberal arts, medicine, civil and cannon law, and theology.
Rising Patterns of Universities: The medieval universities were organized communities of individuals responsible, in a certain towns, for higher education, or for the *stadium*; which implied a degree of independence and internal cohesion. They were founded by prior decision of the civil or religious authorities as well as by “swarm” that a group of masters and students migrated from the mother university to a new place. Since the first universities arose gradually out of pre-existing schools, the fixing of an exact date of birth is always awkward. The written statutes accepted by the papal confirmations were in 1215 and 1231 for Paris, 1220 for Montpellier, and 1252 for Bologna. Medieval universities were founded by prior decision of the civil or religious authorities as well as by “swarm” that a group of masters and students migrated from the mother university to a new place. In England, the migration happened from Oxford to Cambridge during 1209-14 after the arrest and execution of a few students; in France, the similar flight happened from Paris to Orleans or Angers during 1229-31; and in Italy, from Bologna to Padua 1220-22 after the quarrels of students with the city authority. The university became an important cultural center in Europe by the thirteenth century, which dedicated to “the production and diffusion of ideas” toward the intellectual progress and to the training of civil and ecclesiastical leaders. The popes tried to control over the teaching of theology and the proliferation of its master’s degree, and sanctioned its teaching at the university level in Paris, Oxford, and Cambridge. Meanwhile, the civil authorities established universities at Naples (1224), Plague (1347), Vienna (1365), Cracow (1364), and Pecs (1367). The total number of universities in operations in Europe was twenty-eight by 1378; and sixty-three by 1500. Meanwhile, university colleges were founded with the endowment of land, properties, and rents; originally for the mendicant students from monasteries: during 1300-1400, thirty-seven were created in Paris, five in Oxford, and seven at Cambridge. They received wealthier students as well as minority ones.94

The University of Salerno maintained academic fame as a school of medicine in line with Bologna as a school of law, and with Paris as the headquarters of scholasticism for over two centuries.95 Long before the rise of Bologna and Paris, a school of medicine at Salerno was firmly established as an educational institution. A school of medicine was originally established in Salerno in the Greek time, which survived in the Roman time and the Dark Ages; and the Greco-Roman tradition in medicine remained in Palermo due to constant communications with Greek medical writers in Constantinople, the center of Greek culture. The works of Hippocrates, Galen, and other Greek physicians were originally translated into Latin in the sixth century, which was revived in the eleventh century when Arabic translations of Aristotle were introduced to the West. After the middle of the century, Salerno could establish medical science and became the revived medical center owing to the mildness of its climate and the mineral waters of neighborhood, which conditions were proper for the health-resort. In its origin, the school was independent from oriental influences, but the Arabic influence began with Constantinus Africanus (died 1099), a native of Carthage under Arab rule at that time. He translated medical works from Arabic into Latin; and joined Salerno by invitation in 1065 to help the translation of Arabic manuscript, which introduced Greek medicine into the West. Medical education in Salerno began in the Benedictine monasteries, “resulting in association between medical learning and hospitals of the Church…which enables students of all backgrounds.”97 Salerno remained isolated in the academic polity, but its position, was unique as a school of medicine with the mild climate and geographic location. Frederick II in 1231 issued an edict to give the Royal License to its graduates for the practice and teaching of medicine. He required the degree candidate to appear in the Royal Court for the examination of inception, and the applicant received a medical license in the event of success. The monopoly of Salerno was threatened by the rising competition with the University at Naples that included a faculty of medicine when it opened in 1224, so that Salerno began to decline.98
The University of Bologna inherited a long tradition of law teaching. Bologna was famous enough by 1000 as a school of liberal arts; and law became one element in general education in the second half of the eleventh century. Three schools of law existed in Italy before Bologna: Rome, Pavia, and Ravenna. There is no real evidence of any systematic teaching of law at Rome during the Dark Ages, but the school of law had been transferred from Rome to Ravenna after the great burning of Rome by the Normans in 1084. Ravenna was at a point of contact between old Rome and Lombard cities, which revived the old tradition of Roman jurisprudence; while Pavia was famous as a school of Lombard law from the beginning of the eleventh century. In northern Italy, the revival of legal science was common due to the change of political intellectual conditions, while Pavia and Ravenna became the main centers of legal studies before the rise of Bologna.

“Bologna was a nodal point of commercial routes and of the ways of pilgrimage from the north to Rome, as well as the interest of the emperor in the elaboration and application of Roman law as a means of legitimating his imperial claims. This interest moved Frederick I Barbarossa in 1155 to issue Authentica Habita, and led to the strengthening of the municipality of Bologna after the decline of the Holy Roman Empire.” Pepo was the first doctor of law, who taught at the school during 1070-1100; and Irnerius taught Roman law during 1100-30 in favor of the supremacy of the imperial over the ecclesiastical: the systemic study of the whole Corpus Iuris Civilis revived the civil law, which made early doctors in law be imperialists. Owing to the revival of civil law, his student Gratian compiled the first code of cannon law (the law of the Church) in his Harmony of Discordant Canons or so-called Decretum, which was completed as early as 1142 and published in 1151. The laws of the Christian emperors became laws of the Church and of the State of the time, while his cannon law was an imitation of the civil law despite his efforts of being distinct from theology and the civil law. Gradually the schools of arts and medicine were established.99

The society of masters began to exist at Bologna in 1215, and the whole system of degrees was established in about 1219. However, Bologna formed a university of students rather than that of masters. “The town recognized the independence of the universities, which were therefore under the jurisdiction of their rectors, whilst at the same time giving the students, as far as lodgings, provisions, and access to credit and justice were concerned, the same guarantees as were enjoyed by the citizens of Bologna.”100 The recognition of student rights was facilitated by two elements: the prevalence of the conception of personal law and the contemporary guild movement. One is that the law required to respect personal rights. The other is that the university was a particular kind of guild either of masters or of students, and “the rise of universities is merely the wave of that great movement towards association” sweeping over the European cities in the course of the eleventh century. In addition, the Roman law conferred a legal existence upon corporation of three or more persons without any authorization of the state, and their oaths of obedience could create the guilds providing personal security for their members. Meanwhile, the earliest professors at Bologna were its citizens, who allied with the city commune against students for their privileges of the doctorates by promising no-transfer to other schools. So the university at Bologna in its origin was nothing more than a guild of foreign students coming from very distant countries. The student members elected a rector or rectors as the head of their guild, who managed the school for mutual protection and self-government. By means of power of boycotting, the university was able to force the professors to take the oath of obedience to the rectors, though the doctors continued to assert their theoretical superiority to the universities. Their legal and constitutional basis was found in the Papal Bull which confirmed the university statues in 1252. The Bologna model was applied to various universities with gradual changes. The schools of arts had existed since 1220, the schools of medicine appeared around 1260, and the schools of theology was established in the fourteenth century; but their full independence was gradually recognized.101
Chapter IV. Economic Thought and Other Intellectual Developments

*The University of Paris* was developed from the existing church schools of the city as a guild of masters and scholars in the second half of the twelfth century. “The advantages of Paris were partly geographical, partly political as the capital of the new French monarchy, but something must be set down to the influence of a great teacher in the person of Abelard.” The influx of students often from distant parts expedited the rapid growth of schools in Paris, which caused problems of material, institutional, and intellectual. The rise of university was a kind of compromise between parties involved - students, teachers, school facilities, and the civil or ecclesiastical authorities for prior approval. The University of Paris was formed during 1150-70, but its large part was established by 1208. After some students had been killed in town, the masters appealed to the king and obtained power in both church and state. “The king allowed the students the personal privileges of clerics as early as 1200, and the pope solemnly granted the university its first official statutes, in 1215 and in 1231.” In specific, King Philip Augustus issued “a formal privilege which punished his provost and recognized the exemption of the students and their servants from lay jurisdiction, thus creating that special position of students before the courts.” The popes set out to supervise the organization of teaching and to have the new institution serve their own ends, namely the defense and exposition of orthodox doctrines against the threat of heresies, and the training of effective theologians and preachers.” Originally, the chancellor, as an ecclesiastical judge and the head of teachers, granted a formal permission to masters to teach at schools, but later such a license to teach was given to “every properly qualified applicant” without any fee. As the qualification of degree was judged by specialized teachers, the inception was the formal entrance of a newly licensed teacher upon his functions and the recognition of the new-comer into the society of teachers. As the number of masters grew, Paris became the city of teachers, which stimulated the growth of the university. The University of Paris, in fact, was a university of masters maintaining the personal authority over their own students.¹⁰²

The majority of masters was in the faculties of theology, civil or canon law, medicine, and selected fields of arts: the degree candidates were examined by six masters among which three were chosen by the faculty and other three by the chancellor. The chancellor and the university were independent in inception and admission, but the university soon acquired a monopoly just like trade unions by using boycotting power. It was recognized that the university made statutes for its own government and administered oaths of obedience to them. The scholars elected the leader or leaders according to their nations for the avenging of injuries, and the elected rectors of nations instituted a common rectorship during 1222-49. The common rector gradually emerged into the head of the university as a corporation appointing permanent common officers and using a common seal. The faculties were divided by language and regional origin into four nations: France (with Italy and Spain), Picardy (from Low Countries), Normandy, and England (with central and eastern Europe). On the other hand, Paris was the home of the collegiate system: the colleges were small foundations with comparatively little influence over the education system, and the object of the earliest college-founders was simply “to secure board and lodging for poor scholars who could not pay for it themselves.” However, the ‘College of Constantinople’ was connected to its Latin conquest of Christendom in 1204 and the reunion projects of Innocent III; and the ‘House of Sorbonne’ was founded in about 1257, and originally designed for sixteen students of theology, four from each nation. The college had many advantages in teaching from the point of view of the student or his parents as well as that of master. In the thirteenth century, “the university was too cosmopolitan a body to concern itself much with French politics. The French king protected foreign clerks, even when he was at war with their country.” The age of monks was succeeded by the age of friars, which was not followed yet by the age of doctors, but the papacy exercised more influence over education and other European affairs.¹⁰³
The University of Oxford was developed as a *stadium generale* due to the settlement therein of masters and scholars in or about 1167. Oxford was favorable to supply cheaper food and convenient to meet by land as well as water. Unlike in Paris, the growth of schools at Oxford was not pushed by a cathedral or a monastery, so that its masters and scholars enjoyed practical independence from the ecclesiastical control. They were under the authority of the Chancellor of Oxford, who was elected by the masters themselves and whose authority came from the distant Bishop of Lincoln. Some hundreds of young Englishmen annually left the country for studies in Paris about 1167, when Henry II issued a royal edict: “all scholars to return to their country or be deprived of their benefices,” which caused an exodus of masters and scholars from Paris to Oxford and resulted in the cutting of free access of English scholars to the center of European education. The English scholars in Paris congregated under their old masters and transferred their studies and discipline to Oxford. The academic population was more than 3,000 in 1209, when few students involved in a crime and were arrested and executed. In protest at the hanging of students, the university went into voluntary suspension, so that many teachers and students moved to other locations such as a school at Cambridge. The University of Oxford received papal statutes by a legatine ordinance of 1214, which were complemented by royal charters as an independent institution or a corporation. Likewise, the University of Cambridge was confirmed by a papal decree of 1233. Scholars were treated as clerics entitled to trial in the ecclesiastical courts, but the chancellor exercised ordinary cases by excommunication, imprisonment, deprivation of magisterial license, or suspension or deprivation of the scholastic privileges. By 1300, Oxford ranked next to Paris as an intellectual center of Europe, since then Oxford and Cambridge dominated higher education in England, leading medieval education.

Oxford faithfully transplanted the Parisian model. Like at Paris, its faculty of arts took the initiative in university affairs; but unlikely, the superior faculties never existed separately. The friars were well received at Oxford in the beginning, but the statute of 1251 intended to limit the multiplication of friar doctors. With some other measures, the doctorate degree in theology was not given to one who previously obtained no master’s degree of arts. This caused a great feud between the friars and the seculars, when the universities at Paris and Oxford were the organs of the secular clergy at large. The quarrel divided the whole Church of England as well as that of Europe throughout the fourteenth century. The University of Paris, in the structure, applied a federal constitution consisting of four distinct corporations, while that of Oxford a parliament of several estates with a dominant one. Whatever was read and taught in Paris was sure sooner or later to be read and taught in Oxford. However, Oxford was something more than a place reflecting the intellectual life of Paris. Robert Grosseteste studied and taught at the University of Oxford, where he became one of the most famous teachers of his time. He served as chancellor of Oxford during 1215-21, where later he lectured to Franciscans until his appointment as bishop of Lincoln in 1235. Since the authority of bishop superseded that of the chancellor, the bishop generally regarded the new statute of the university as “an infringement of his prerogatives.” By the beginning of the fourteenth century, the university had practically obtained stronger power in the spiritual jurisdiction. As the Wiclifism grew up, Nicholas Hereford violently attacked on the Mendicants in 1381. Despite the pressure of condemnation from the archbishop and the pope, the chancellor of Oxford allowed him to submit his anti-sacramental thesis as a doctor of divinity without any opposition, though the freedom was continuously disturbed by papal legates and heresy-hunting bishops and inquisitors. In 1490 the chancellor of Oxford received the privilege of licensing preachers to preach in every diocese in England, which privilege was “the last accession of dignity” that the university still retains though obsolete.
Chapter IV. Economic Thought and Other Intellectual Developments

Authorities, Management, and Teachers: Medieval universities were chartered by either the church or the state or both, and their governing rules were influenced by spiritual or temporal authorities. Teachers and scholars concerned about how to obtain the license to teach (*licentia docendi*), the freedom of movement to carry out their teaching, the cost of living at the university town, salary or compensation, and the educational environment. In 1155, Frederick I affirmed the foremost value of scientific knowledge, granted professors of civil law, and gave students freedom of movement and safe resident; decreed that no one dare to harm or wrong scholars, or to recover from them debts contracted by their countrymen; and ordered that any summoned scholar to appear in court could choose whether to be tried by his own masters or by the bishops’ courts. Alexander III abolished the custom of money payment in the diocesan schools for the award of the license to teach in 1156, reformed the educational practices of the church, and encouraged that the poor students could be admitted by merit and that teachers were adequately paid. About the time of Innocent III, teachers and scholars were “the mirror of the church” since the highest ecclesiastical dignitaries were mostly filled from the academic circles. He authorized clerics going to study with benefits of regular income in 1207, ordered cathedral churches to open schools for priests and poor laymen in 1215, and required schools of theology to be set up in metropolitan dioceses. Honorius III tried to protect teachers and students from local ecclesiastical authorities. In 1219, he forbade the schools in Paris and neighboring cities to teach civil law because France laymen did not use the laws of the Roman emperors; and he refused regular and secular clergy to study civil law and medicine at the universities. Frederic II founded the University of Naples in 1224 to create intellectual elite for his kingdom by force of law. He provided protection and privileges for teachers similar to the other prominent universities, but forbade any person to leave the kingdom to teach or study. In Naples, “the ecclesiastical authorities had no authority to recruit teachers, award the *licentia docendi*, or exercise jurisdictional powers.”

Despite efforts of emperors and kings, the control of the medieval university was tightly linked to the ecclesiastical authorities - popes, cardinals, and bishops who intervened in various noisy matters. In 1231, Gregory IX intervened in the controversy between the University of Paris and Louis IX of France: the pope authorized teachers and scholars to suspend lessons whenever their privileges were seriously infringed. Innocent IV and Alexander IV continuously supported benefits for teachers and students; but their privileges, freedom, and immunities would never had been put into effect without the collaboration of the secular authorities. Henry III granted wide power of jurisdiction to the chancellor of Oxford in 1244 by “making him competent to try cases of debt, the fixing of rents for lodgings, the hire of horses, breaches of contract, and purchase of victuals.” As the kings and princes were more anxious to have the services of university-trained administrators, the secular authorities became more active in higher education in the fourteenth century. For example, when the professors of Bologna deplored the ignorance of judges, city governments in Italy increasingly subsidized and regulated their own schools. The commune of Bologna extended its influence and control over the university by “granting the students the right to compensation for damage suffered in riots or fires and concessions regarding rents, food purchase, and the validity of contracts and wills made in a form other than the required by the laws of the city.” Similarly in many parts of Europe, “princes and communities of citizens joined the ecclesiastical authorities in promoting and organizing new and old centers of learning.” Charles IV founded the Plague University in 1348 on the model of both Paris and Bologna, but his pro-Czech policy caused the non-Czech professor and students to leave Prague. As new universities were founded by the authorities, spiritual and temporal interests could co-exist peacefully and work together for common goals. In the thirteenth century in Italy, academics became more closely associated with the richest families who filled major political offices.
Chapter IV. Economic Thought and Other Intellectual Developments

The personal status of university students was firmly established by the growing spiritual authority over universities in the thirteenth century. The students were forbidden to bear arms, to wear secular clothes, and unusually to marry; while they enjoyed liberties and immunities. They were answerable only to ecclesiastical courts, and enjoyed the exemptions from taxation and military service that was allowed to the clergy. The students in a sense were not subject to the jurisdiction of the local ecclesiastical authorities, but could appeal directly to the pope or his representative. In Bologna, since teachers and students born in the town did not need protection, they did not join the students’ corporation. Meanwhile, foreign-born teachers joined their own guild, and foreign students formed two nations by the geographical origin: students from the Italian peninsula and students from beyond the Alps. Their main faculties were the faculty of law and the faculty of arts and medicine, while the theological faculty was in the hands of the mendicant orders. Padua followed the same pattern of Bologna. On the other hand, the Parisian model had four faculties, consisting of one lower faculty of arts, and three higher faculties of theology, law, and medicine, which model was adopted by the universities of north-western and central Europe. Until the end of the thirteenth century, the popes protected the monopoly of theology at Paris, and objected to a new creation of theology faculties elsewhere. The faculty had its own head, either a rector or a dean who was chosen by masters but engaged in teaching and managing. Originally, the head of the university was the bishop’s representative, but most of judicial powers passed to the rector in the course of the century. In Bologna, the rector was elected by nations and convoked the general congregation; while in Paris, regent masters of all the faculties formed the general congregation running the school under which the rector worked. In order to secure the rights and privileges of the university, popes and kings appointed their conservators to safeguard the rights and privileges of the studia generalia, to whom members of the university appealed when their benefits were invaded. Nevertheless, kings and princes tried “to reduce academic autonomy, limit abuses of privileges, and restore order and discipline in the universities.”

The university was financed by internal and external sources: “The internal sources were fees for matriculation and graduation, graces (dispensations from the statutory conditions for degrees) and other dispensations, money collected from the nations, and collectae. External sources were ecclesiastical benefices, salaries paid by the king, duke, or town, gifts and legacies, and grants and endowments given for the permanent support of the university.” But the state university was directly financed by the crown. In the beginning, lectures were held in houses rented by the masters and examinations in churches or convents; and school buildings arose everywhere as time passed. Each faculty wore robes of distinguished shape and color, and the students wore the regulated costumes, the long black tabard and hood. The three terms of master, doctor, and professor were indiscriminately used in the Middle Ages. The title of master required three tests: first, the university authorities consisting of masters, the rector, and the chancellor investigated whether the candidate fulfilled the required conditions such as his morality and previous studies; second, a jury of masters gave the actual examination, ordinarily consisting of a disputation over the given questions upheld by the candidate; third, the public examination given to a candidate who passed two exams was a ceremony taking place in a church to display the competence by showing the qualification of his graduation and degree holding suited to teaching as a member of the profession. But only a small portion of students ever actually graduated due to the long period of time, the high cost, and the expense of the degree itself. The graduates often remained teachers all their lives, but many of them pursued the other careers after some years of teaching although some returned. The teachers collected examination fees and some money from students, and received a fixed salary, which varied by region or state. The doctor’s image or authority was not only intellectual but moral practicing Christian virtues.
Students and Careers of Graduates: The medieval universities had no national, social, intellectual, physical, and linguistic requirements for admissions; the only requirement was being baptized as a Christian. The university was an association of students formed around the teacher in accordance with the traditional social norms prevailed in European societies, so that the students selected the school based not on the university as a whole but on the individual professor. As early as 1215, it was said that “nobody was a student of the University of Paris if he did not have a permanent teacher.” By contrast, the student associates and nations were more prominent for the University of Bologna and other law universities following its model. Once admitted, the university required the matriculation under the authority of the rector to be a legal member of the privileged community by taking an oath and paying fees with formal registration, which procedure became standardized in the late fourteenth century and later. The figures for matriculation continuously increased but fluctuated according to political, economic, and social conditions: upward movements in the boom and downward in slump. For example, the number of students at the Polish University of Cracow increased during 1400-1510, and the proportion of foreign students became up to 30 to 50 percent of the total.\(^{113}\)

The supply of masters surpassed the demand from the government, church, and the school, which caused the crisis of oversupply of educated manpower after the 1480s in Germany; and the same possibly occurred elsewhere. According to the prevailing social and economic criteria of stratification of the ages, Rainer C. Schwinges introduced five types of student: the scholarius simplex, the baccalarius, the master-student, the student of rank, and the specialist student though they never constituted a closed system. First, the student joined the university in the faculties of arts from the middle class of society after acquiring a basic knowledge of reading and writing as well as of Latin grammar in his hometown; and they attended the class for 1.8 years in average without pursuing any academic title, which proportion was fifty percent or more of the total attendance. Second, the student from the very low level of society joined the university in the faculties of arts to mobilize himself through education by pursuing the bachelor’s degree after two and half years of studies. Third, the student mainly pursued a master of arts from the bachelor’s degree, and some continued his studies toward the higher faculties. Fourth, the student came from the prestigious class with prior education of master’s level through private tutors. Fifth and finally, the student continues his studies after his bachelor’s degree toward a doctorate degree in higher faculties of medicine, theology, cannon and civil law or both.\(^{114}\)

The students consisted of three social strata: the nobility (nobiles), the rich (vivites), and the poor (paupers). Since the student of noble rank had no need of university background, the university offered the two-year training courses within the framework of the basic arts or mostly the basic law programs. The student from the rich stood apart from the aristocracy and high ecclesiastical dignitaries, but above the middle and poor classes of the society. The student from the poor, the disadvantaged sharing about 15-20 percent of all students, formed a problematic group at the lower end of the community by separating himself from other student groups without any cohesiveness.\(^{115}\) However, a wide range of student organizations functioned with the equal rank of members except the lord-and-servant groups. In learning, a traditional knowledge accumulated and commented by recognized authorities was introduced to the students of any level rather than scientific education. The teachers gave identical forms of the lecture and the disputation: the lecture was dependent upon the books categorized by ordinary and extraordinary, and the disputation was focused on the application of materials. As written materials were not available to everyone, oracy (verbal comprehension) was a natural goal of education. The students usually spent six to eight years to obtain the doctorate degree in law and medicine, but the students pursuing the same degree in theology had to work much longer years.\(^{116}\)

\(^{*}\)
The careers of graduates depended on the traditional qualifications of birth and property, so their diplomas were only a small decoration given to the privileged classes in the beginning. In Italy, the communities needed more jurists, notaries, and secretaries for their administrations and legal systems “in the quest of increasing autonomy and in the competitive struggle with their neighbors” and more law graduates were hired by the state and the church, which created a new class of law specialists. In France, the church milieu was more important: Innocent III appointed one in six cardinals from Parisian graduates, and the kings increasingly employed masters for the court. England was less directly involved with the papacy, but educated laymen from Oxford actively cultivated law in the royal court. Although foreign student did not come to England, the English students studied at Paris or elsewhere. The Spanish and Portuguese students enrolled in the universities in Italy and France, and most of them became canons. The students of Germans, Danes, and Hungarians to Paris were above the average in their social ranks: “the further was we look, the more modern the social world we find and the more chances someone with fewer or no advantages of birth and property had than in the east.” As study was not an effective engine to promote a career in younger Europe, the university graduates could not yet establish professional groups. During 1200-1378, the universities were primarily clerical institutions, and the increasing number of students was largely employed in church administration: during 1309-78 among 134 cardinals, 66 were university graduates from which 71 percent was in law, 28 percent in theology, and 1 percent in the arts. In France, during 1280-1320 in the five Senechaussées of the south, 189 jurists were appointed for royal service (131 judges and 58 advocates and prosecu-tors) among which 54 jurists had the title of doctor, which is unimaginable in younger Europe even centuries later. Most of doctoral jurists came from the property owning class, except a few from aristocratic families. Jurists and physicians were lucrative professions, but the masters of arts often sought jobs at schools, while canonists were mainly employed by the churches.

The academic pilgrimage was a journey to European countries by students and teachers for the purpose of study. In the beginning, students chose their discipline and teacher, and the influx of students formed universities at Bologna or Paris; until the seventeenth century, all European universities used Latin as a common language, and their curricular, degrees, and the system of examinations were the same. Therefore, a student could start his course at one university nearby his hometown and continue his study at different universities, either domestic or foreign, by traveling one after another throughout Christendom. By the thirteenth century, high education was fairly specialized at major universities: cannon and civil law at Bologna, Montpellier, and Orleans; medicine at Bologna, Padua, Montpellier, and Paris; and arts and theology at Paris and Oxford. In the fourteenth century, university recruitment was more regionalized, and itinerant scholars crossing Europe were few by limiting to young students who really favored to study in foreign countries. For example, in the beginning of the century in France, among 301 registered doctors, “57.8 percent of them had studied in Paris, 35.3 percent in Montpellier, 2.7 percent in other French faculties of medicine, 4.3 percent aboard.” The Schism made Avignon thrived, while masters and students of the German nation ceased to attend French universities and left Paris for Prague, Vienna, Heidelberg, and other German universities. The Hundred Years War forced Scottish students leave Paris for Cologne and later Louvain. By the fifteenth century, the change of political, economic, and religious environment attracted students again to enroll at foreign universities. Finally, major problems of travelers were not only in the poor quality of roads, bridges, lodgings, and vehicles but also in customs dues, tolls, taxes, and other fees. At the time of political tension or military operations, they needed special measures for protection by sovereign authorities. Despite many problems, different principles, ideas, and opinions with new experiences were greatly valuable to the travelers to be the elite of their country.
Four Faculties of Learning: **The liberal arts** were divided into two: three verbal disciplines of grammar, rhetoric, and logic (*trivium* or threefold way to wisdom) and four mathematical disciplines of arithmetic, geometric, astronomy, and music (*quadrivium* or four-fold way). In the mid thirteenth century, three philosophies - natural, moral, and metaphysical - were included in the arts. The liberal arts were fundamental for the church to educate the clerics to comprehend the Bible and for the state to educate the clerks (students) to carry out its administration. The arts were subordinate to theology; rhetoric was ancillary to the law; logic was essential to philosophy; and natural science was instrumental to the study of medicine. The minimum age for admission to the master’s program was fourteen or fifteen, the minimum age for graduation was twenty, and the length of the course was six years at Paris but seven years at Oxford. The bachelor’s degree required four years of study at both universities. In the *trivium*, grammar was regarded as the preliminary course for the study of rhetoric and logic; but rhetoric gradually became influential to letter-writing and preaching. Aristotle’s main works on natural philosophy and his metaphysics were officially accepted by Paris in 1255; Oxford taught much more on mathematics and astronomy before 1350 but never mentioned of Aristotle’s *Metaphysics* before 1407. For the *quadrivium*, the traditional texts included Euclid’s *Elements*, Boethius’ *Arithmetic*, and Ptolemy’s *Almagest*. The translations from Arabic into Latin in Spain with the help of Muslim and Jewish scholars gave educational materials like the *Elementa* of Alfraganus, the *Sphere* of Sacrobosco, and continuously accumulated materials. Music was important in Christian worship for which Boethius introduced the Pythagorean theory with harmonic ratios of numbers; the main text of arithmetic was Boethius’ dealing with addition, subtraction, multiplication, and division; problems of geometry were connected to optics since the creation of the entire material universe was considered as relations with the activity of light; and the astronomy were taught by the new books of Alfraganus and Sacrobosco in the later period.

**The medicine** of medieval universities flourished “in the context of the multiplication of schools providing Latin literacy, the proliferation of healers of all kinds who practiced their art for pay, and the spread through many levels of society of willingness and ability to purchase medical intervention.” But the university-trained physicians were a minority among all of medical and surgical practitioners. For example, in France in the century after the Black Death, all medical practitioners excluding surgeons and barber-surgeons were more than 4,000 and the university-trained practitioners were near 2,000 in which the number of regent masters or professors was 417. In terms of the medical hierarchy, the university doctor was followed by the surgeon and the barber-surgeon who were commonly trained through a guild apprenticeship. The major centers for medical education after the decline of Salerno were Bologna, Montpellier, and Paris, but Padua and Ferrara were included later. Their differences lay “more in size, reputation, and institutional position than in curriculum.” The translated texts from Greek and Arabic origins were substantially used for medical education at the university, which included works of Hippocrates and Galen, and Dioscorides of *Materia medica*. Galen’s treatise *On the Usefulness of the Parts of the Body* was partially translated into Latin in the early fourteenth century but fully in 1565, and *On Anatomical Procedures* was fully printed in 1525. “Arabic medical works were valued not only for their synthesis of ancient medicine, but also for their independent contribution to treatment and to herbal pharmacology.” The central concept of education was in two categories. One was *complexion* (temperament) that means the balance of elementary qualities of hot, wet, cold, and dry both in human body and in substances used for therapeutic purposes or medicine (in other words, between patient and medicine). The other was in “the influence of the heavenly bodies on terrestrial events, including health and disease” which was associated with the development of astrology. Some paid minimal attention to the whole subject.
The faculty of law at Bologna was transplanted to other universities in Italy, France, Spain and Portugal, England, Scotland, and the Holy Roman Empire from the late twelfth century. The canon law was taught at Bologna at the time of Gratian, and the texts of canon law appeared in northern France and the Rhineland in the 1260s. “There are three schools of modes of comment on legal texts: the glossators’ school, the post-glossators’ school or mos italicus, and the mos gallicus.” The glossators used the complete Justinian collections, not anthologies or fragments of them, with concentration on the letter of the law-books. The post-glossators used dialectic commentaries, a new method introduced by the discovery of Aristotle’s works providing greater freedom in the study of law. Mos gallicus is the name given by legal humanists, who adopted a philosophical and historical approach in their study of law, which mode was most influential in the Netherlands. The universities taught law by Latin, but from the thirteenth century onwards, important legal works were written in the vernacular languages, that stimulated interdependence between legal teaching and writing. The legal texts and commentaries of Corpus iuris (canonici and civilis) are known as Roman-canon law (ius commune) which signifies “that this code of laws was in principle considered to be valid throughout the whole of medieval Christendom, although co-existing with many statutes and other local regulations forming exceptions from it.” In fact, the universities taught Roman-canon law as the only law with rare exceptions until the seventeenth century. In the second half of fifteenth century, the total number of faculties (teachers and students) was about 6,000-7,000, among which the law scholars were about 1,000 (15.3 percent of the total). At the University of Cologne in 1389, the total number of scholars was 759 among which jurists were 156 (20.5 percent). Theology attracted more students than law at Paris, Oxford, and the German universities; at Bologna during 1265-1300, among 220 of German students, clerics were 154, laymen 32, and unknown 34; and the average age of entire student there was between twenty-three and thirty. Considerable opportunities were open to law graduates.

The faculty of theology had been in more concern by the papal authority. Before the rise of universities, the fathers of the church and the monks in the monasteries were the main body of all education. They were Augustine (d.430) of De doctrina Christiana, Boethius (d.c.524) of Theological Tractates, Peter Damian (d.1072) of De Dei omnipotentia, Anselm of Canterbury (d.1109) of Monologion and Proslogion, Anselm of Laon (d.1117) of Glossa ordinaries, Peter Abelard (d.1142) of Sic et non, Peter Lombard (d.1160) of Sentences, and followed by five more theologians who served for the church and the state. By dominating theology education, Paris became responsible for the purity of Christian doctrine, and the pope exercised its control over Parisian theology. Although theology was taught in universities, the right to confer degrees in theology was limited to Paris, Oxford, and Cambridge until the fourteenth century. Paris and Oxford provided mendicant schools in the university. By 1253 no one could become a master in theology without previously obtained master’s degree in the liberal arts, which caused conflict between the secular masters and the friars at the university. However, the friars had practically monopolized the theoretical teaching in many universities before they were formally recognized as theological faculties. The textbooks of theology were limited to the Bible and the Sentences of Peter Lombard, but the Dominican order required one more book - the Historia scholastica of Peter Comestor; and the teaching methods included lectures, disputations, and sermons. If the secular students with master of arts completed seven years of audition in theology, they could lecture on the Sentences; the mendicants who had no master’s degree in arts had to study philosophy for eight years in the arts faculty and additional nine years in theology; hence, the age for graduating as a master of theology became minimum thirty-five. The monopoly of Paris and Oxford in theology was broken by 1347 when the Plague University (first German university) was founded; and in Italy the faculties of theology were mostly taken by the mendicants.

In ancient Greece, Aristotle attributed many treatises of both philosophy and science on diverse subjects, and his studies affected particularly the studies of science until the seventeenth century. The science of the Roman Empire was a simple extension of the Greek studies. For example, the medicine was based on Hippocratic treatises like *On the Sacred Disease*, *On the Nature of Man*, and *Epidemics*; and some six centuries later Galen established the Greco-Roman medicine with writings *On the Natural Faculties*, *On Anatomical Procedures*, *On the Use of Parts*, and *That the Best Doctor is also a Philosopher*, which were spread into Syria and Persia where the Arab scholars imbibed Aristotle and Galen with creative commentaries. Mathematics dealt with Euclid’s *Elements*; Archimedes’ *On the Equilibrium of Planes*, *On Floating Bodies*, *The Sand-Reckoner*, and *On the Measurement of the Circle*; Apollonius’ *Treatise on Conic Sections*; and Pappus’ *Mathematical Collection*. In astronomy, Exdoxus of Cnidus (d. c. 347 B.C.) proposed “A System of Homocentric Spheres” followed by Ptolemy’s *Almagest* or *Mathematical Syntaxis*, which was effective until Copernicus wrote *On the Revolutions of the Heavenly Spheres* in 1543.

In mechanics, the study depended on Euclid and Archimedes who wrote treatises on the balance, equilibrium, or floating, and on Hero of Alexandria (d. 70) who wrote *Mechanics* about “wheel and axle, the lever, a system of pulleys, the wedges, and the screw” and the *Pneumatics* about vacuum, air pressure, and water pressure. Thus, the Roman Empire inherited the legacy of Greek science from which its scientists added their own ideas like Galen in medicine, Ptolemy in astronomy, and Hero in mechanics. Meanwhile, unlike Islam, Christianity was spread relatively slowly in a peaceful manner with the separation of church and state as Jesus preached: “Render therefore unto Caesar the things which are Caesar’s; and unto God the things that are God’s” (Matt. 22.21). Christian attitudes toward Greek philosophy and science in the first six centuries explain the relations between religion and science of the time.

One of pagan intellectuals, Philo of Alexandria (d. c. 50) had an idea that secular disciplines should not be studied for their own sakes, but “only to understand and explicate Holy Scripture and theology.” Tertullina of Carthage (d. c.225) expressed an anti-intellectual position: “For philosophy is the material of the world’s wisdom, the rash interpreter of the nature and dispensation of God. Indeed heresies are themselves instigated by philosophy….We want no curious disputation after possessing Christ Jesus, no inquisition after receiving the gospel! When we believe, we desire no further belief. For this is our first article of faith, that there is nothing which we ought to believe besides.” Saint Basil (d. c. 379) took a skeptic position that “the wise men of the Greeks wrote many works about nature, but not one account among them remained unaltered and firmly established, for the later account overthrew the preceding one.” Christians believed that God had created the world as a self-operating entity but intervened to perform miracles as deviations from natural order; and that the Greeks had derived their philosophy from the Old Testament. Among Greek Church fathers, Justine Martyr (d. c. 165) thought that “the best aspects of Greek philosophy were compatible with Christianity” and Clement of Alexandria (d. c. 219) viewed that philosophy served Christianity by “paving the way for him who is perfected in Christ.”

Among the Latin Church fathers, Augustine (d. 430), who knew the role of reason and logic, advocated the use of philosophy “when it furthered the aims of the Christian religion” but urged avoidance of secular learning “when it had no such purpose.” The Christian understanding of the creation of the world is based on *hexamera* (the six days), in which the world is created from nothing, while the Aristotelians view that the world is eternal (pre-existed). In his unfinished *Literal Meaning of Genesis* of 391, Augustine explains that God created all things simultaneously, but “chose to narrate the creation on a day-by-day basis.”
Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-6-1. Medieval Science Studies
Why did science make little real progress in Europe in the Middle Ages?
Accessed 5 October 2015, https://qph.ec.quoracdn.net/main-qimg-26be1e3fa3251408999d8be90fdbe8a3-c

Photo IV-6-2. Related Keywords & Suggestions for Medieval Science
Chapter IV. Economic Thought and Other Intellectual Developments

Medieval Science and Technology: Martianus Capella settled in Carthage during 410-39, and wrote On the Marriage of Philosophy and Mercury. “The book, embracing in résumé form the narrowed classical culture of his time, was dedicated to his son. Its frame story in the first two books relates the courtship and wedding of Mercury (intelligent or profitable pursuit), who has been refused by Wisdom, Divination and the Soul, with the maiden Philologia (learning, or more literally the love of letters and study), who is made immortal under the protection of the gods, the Muses, the Cardinal Virtues and the Graces. The title refers to the allegorical union of the intellectually profitable pursuit (Mercury) of learning by way of the art of letters (Philology). Among the wedding gifts are seven maids who will be Philology's servants: they are the seven liberal arts: Grammar, Dialectic, Rhetoric, Geometry, Arithmetic, Astronomy and Harmony…As each art is introduced, she gives an exposition of the principles of the science she represents, thereby providing a summary of the seven liberal arts. Two other arts, Architecture and Medicine, were present at the feast, but since they care for earthly things, they were to keep silent in the company of the celestial deities...The eighth book describes a modified geocentric astronomical model, in which the Earth is at rest in the center of the universe and circled by the moon, the sun, three planets and the stars, while Mercury and Venus circle the Sun.”

Boethius (d. 524) translated five of Aristotle’s works, and wrote treatises on the quadrribium (arithmetic, geometry, astronomy, and music) of the seven liberal arts, and The Consolidation of Philosophy as previously discussed. Cassiodorus (d. 583) wrote the Introduction to Divine and Human Readings with two parts: one is how to study scriptures by emphasizing the utility of the seven liberal arts to arrive at spiritual truth, and the other devoted to the seven liberal arts with little attention to geometry and astronomy. Isidore (d. 636), bishop of Seville, wrote extensively, but particularly On the Nature of Things and Etymologies on science: the former was about cosmology with forty-eight chapters, and the latter in twenty books dealt with many topics in science – Book III Mathematics, Music, Astronomy; Book IV Medicine; Book VII Animals; XIII The Cosmos and its Parts; XIV The Earth and its Parts; XV Building and Fields; XVI Stones and Metals; and XIX Ships, Buildings, and Clothing. Bede (d. 735) wrote On the Nature of Things and On the Divisions of Times employed different systems of chronology from which he learned of the correlations between the tides and the motion of the moon, which was essential to establish the port; and his Ecclesiastical History was previously discussed.

In the period of external invasion until tenth century, barbarism and chaos reflected on the intellectual history particularly in science. John Scotus Eriugena (d. 877) wrote on the Division of Nature dealing with reason and faith. “When reason pursues the method of division in regard to nature itself, it is following the path which Good took in His creation of all beings from the highest down to the least…Thinking in a activity, a motion of the mind, and the structure of its object, reality, becomes the articulation of its thoughts.” Gerbert of Aurillac, Sylvester II (999-1003), was a prolific scholar and teacher. He endorsed and promoted study of Arab/Greco-Roman arithmetic, mathematics, and astronomy, reintroducing to Europe the abacus and armillary sphere, which had been lost to Latin (not Byzantine) Europe since the end of the Greco-Roman era. He is said to be the first to introduce in Europe the decimal numeral system using Arabic numerals.” He was the first French Pope. “Gerbert reintroduced the astronomical armillary sphere to Latin Europe via the Islamic civilization of Al-Andalus, which was at that time at the edge of civilization…Constantine, the abbot of Micy, as well as the accounts of his former student and French nobleman Richer, who served as a monk in Rheims. Richer stated that Gerbert discovered that stars course in an oblique direction across the night sky. Richer described Gerbert's use of the armillary sphere as a visual aid for teaching mathematics and astronomy in the classroom, as well as how Gerbert organized the rings and markings on his device.”
(a) **Mathematics**: Leonardo Fibonacci (1170-1250) was born at Pisa, and his father was manager of a Pisa trade agency in Algeria; Leonardo joined him there, and was taught by a Moslem master. "He travelled Egypt, Syria, Greece, and Sicily, studies the methods of the merchants, and learned to reckon, he tells us, by a marvelous method through the nine figures of the Indians; here at the outset of their European career the new numerals were properly called Hindu, and what it now a bore and chore of our childhood was then a wonder and delight. Perhaps Leonardo learned Greek as well as Arabic; in any case we find him well acquainted with the mathematics of Archimedes, Euclid, Hero, and Diophantus. In 1202 he published his *Liber abaci*; it was the first thorough European exposition of the Hindu numerals, the zero, and the decimal system by a Christian author, and it marked the rebirth of mathematics in Latin Christendom. The same work introduced Arabic algebra to Western Europe, and made a minor revolution in that science by occasionally using letters, instead of numbers, to generalize and abbreviate equations. In his *Practica geometriae* (1220) Leonardo, for the first time in Christendom so far as we know, applied algebra to the treatment of geometrical theorems. In two smaller works of the year 1225 he made original contributions to the solution of equations of the first and second degree. In that year Frederick II presided at Pisa over a mathematical tournament in which different problems were set by John of Palermo and solved by Fibonacci. Despite his epoch-making work, the new method of calculation was long resisted by the merchants of Europe; many of them preferred to finger the abacus and write the results which Roman numerals; as late as 1299 the abacists of Florence had a law passed against the use of the new-fangled figures. Only a few mathematicians realized the new symbols, the zero, and the decimal alignment of units, tens, hundreds…opened the way to such developments of mathematics as were almost impossible with the old letter numerals of Greeks, Romans, and Jews. Not till the sixteenth century, did the Hindu numerals finally replace the Roman.” The duodecimal system survived in many fields in England and America.\(^{128}\)

“Mathematics in the Middle Ages had three purposes: the service of mechanics, the keeping of business accounts, and the charting of the skies. Mathematics, physics, and astronomy were closely allied, and those who wrote on one of them usually contributed to the others as well. So John of Holywood known to the Latin world as Joannes de Sacrobosco, studies at Oxford, taught at Paris, wrote a *Tractatus de sphæra – Treatise on the (Earthly) Sphere* – and an exposition of the new mathematics, *Algorismus vulgaris – Mathematics for the Millions* (c. 1230). *Algorismus*, a corruption of the name al-Khwarizmi, was the Latin term for an arithmetical system using the Hindu numerals. John credited the Arabs with the invention of this system, and was partly responsible for the misnomer Arabic numerals. Robert of Chester, about 1149, in adapting the astronomical tables of al-Battani and al-Zarqali, brought Arabic trigonometry to England, and introduced the word *sinus* (bay, sine) into the new science.”\(^{129}\) “The astronomical instruments and tables of the West were imported from Islam, or were modeled on Islamic originals. In 1091 Walcher of Lorraine, later Prior of Malvern Abbey, observed lunar eclipses in Italy with an astrolabe; this is the earliest known case of observational astronomy in the Christian West; but even two centuries later (c. 1296) William of St. Cloud had to remind astronomers, by precept and example, that the science grew best on observation rather than on reading or philosophy. The best contribution to Christian astronomy in this period was the Alfonsine Tables of celestial movements, prepared for Alfonso the Wise by two Spanish Jews. The accumulation of astronomical data revealed the imperfections of the calendar established by Julius Caesar (56 B.C.) from the work of Sosigenes, which made the year too long by eleven minutes and fourteen seconds; and the increasing intercourse of astronomers, merchants, and historians across frontiers exposed the inconvenience of conflicting calendars…The *Computus* (c. 1232) of Grosseteste was the first step toward the Gregorian calendar (1582) that guides and confuses us today.”\(^{130}\)
(b) **Geology**: The least progressive medieval science was geology. Gerald of Wales (1147-1223) was a chronicler of his times. He roamed over "many lands and topics, mastered many tongues but not his own, accompanied prince John to Ireland, lived there two years, toured Wales to preach the Third Crusade, and wrote four vivacious books on the two countries. He weighed down his pages with bias and miracles, but lightened them with vivid accounts of persons and places, and lively gossip of the trivial things that make the color of a character or an age. He was sure that his works would immortalize him, but he underestimated the forgetfulness of time." In 1107-11, "Sigurd Jorsalafarare (1090-1130), King of Norway, sailed as a crusader with sixty ships via England, Spain, and Sicily to Palestine; after fighting Moslems at every opportunity he led his lessened band to Constantinople, and thence overland through the Balkans, Germany, and Denmark to Norway; the story of this adventurous journey forms one of the great Scandinavian sagas." In 1270 Lancelotte Malocello was a Genoese navigator rediscovered the Canary Islands in 1312 and the island first appeared on a European map of Angelino Dulcert (the Dulcert Atlas) in 1339 under the name island of Lancelotto Malocello. The chief contributions to European knowledge of the Far East were made by two Franciscan monks. In April 1245 Giovanni de Pano Carpini, sixty-five and fat, was sent by Innocent IV to the Mongol court at Karakorum. Giovanni and his companion suffered in the enterprise every hardship this side of death. They travelled for fifteen months, changing horses four times a day. Pledged by the Franciscan rule to eat no meat, they almost starved among nomads who had hardly any other food to give them. Geovanni’s mission failed, but after his return to Europe he compiled an account of his journey which is a classic in the literature of geography – clear, impersonal, matter-of-fact, without a word of self or complaint…Here, for the first time, European geography learned the sources of the Don and the Volga, the position of Lake Balkhash, the cult of the Dalai Lama, the settlements of Nestorian Christians in China, and the distinction of Mongols from Tatars." The most famous and successful of medieval European travelers in Far East were the Polo family of Venetian merchants. "Andrea Polo had three sons – Marco the elder, Niccolo, and Maffeo – all engaged in Byzantine trade, and living in Constantinople. About 1260 Niccolo and Maffeo moved to Bokhara, where they remained three years. Thence they travelled in the train of a Tatar embassy to the court of Kublai Khan at Shangtu. Kublai sent them back as emissaries to Pope Clement IV; they took three years to reach Venice, and by that time Clement was dead. In 1271 they started back to China, and Niccolo took with him his boy Marco the younger, then seventeen. For three and a half years they travelled across Asia via Balkh, the Pamir plateau, Kashar, Khotan, Lop Nor, the Gobi Dessert, and Tangut; when they reached Shangtu, Marco was almost twenty-one. Kublai took a fancy to him, gave him important posts and missions, and kept the three Poli in China for seventeen years. Then they sailed back, through three years, via Java, Sumatra, Singapore, Ceylon, and the Persian Gulf, overland to Trebizond, and by boat to Constantinople and Venice, where, as all the world knows, no one would believe the tales ‘Marco Millions’ told of the gorgeous East. Fighting for Venice in 1298, Marco was captured, and was kept for a year in a Genoese jail; there he dictated his narrative to a fellow prisoner. Nearly every element in the once incredible story has been verified by later exploration. Marco gave the first description of a trip across all Asia; the first European glimpse of Japan; the first good account of Pekin, Java, Sumatra, Siam, Burma, Ceylon, the Zanzibar coast, Madagascar, and Abyssinia. The book was a revelation of the East to the West…As the orbit of commerce and travel widened, the science of cartography crept laboriously beck toward the level it had reached in Augustus’ days. Navigators prepared portolani – guides to the ports of trade, with maps, charts, itineraries, and descriptions of the various harbors; in the hands of the Pisans and Genoese these portolani reached a high degree of accuracy." The mappae munid was drawn by the monks of this period.
Botany and Biology: “Nearly everyone believed that minute organisms, including worms and flies, were spontaneously generated from dust, slime, and putrefaction. Bestiaries had almost replaced zoology; since monks did almost all the writing, the animal world was considered largely in theological terms, as a storehouse of edifying symbolism; and additional creatures were invented in playful fancy or pious need.” Bishop Honorius of Autun said in the twelfth century: “The unicorn is a very fierce beast with only one horn. To capture it a virgin maid is placed in the field. The unicorn approaches her, and resting in her lap, is so taken. By the beast Christ is figured; by the horn his insuperable strength…Resting in the womb of a virgin, he was taken by the hunters. – i.e., Christ was found in the form of a man by those who loved him.” The most scientific work of medieval biology was Frederick II’s De arte venandi cum avibus, a 589-page treatise on the art of hunting with birds. It was based partly on Greek and Moslem manuscripts, but largely on direct observation and experiment; Frederick himself was an expert falconer. His description of bird anatomy contains a great number of original contributions; his analysis of the flight and migration of birds, his experiments on the artificial incubation of eggs and the operations of vultures show a scientific spirit unique in his age.” He illustrated his text with hundreds of drawings of birds.136

Physics: Jordanus Nemorarius became a second General of the Dominican Order in 1222. “In three mathematical treatises rivaling those of Fibonacci in courage and influence, he accepted the Hindu numerals, and advanced algebra by regularly using letters instead of figure for his general formulas. His Elementa super demonstrationem ponderis studied the component of gravity along a trajectory, and laid down a principle now known as the axiom of Jordanus: that which can raise a certain weight to a certain height can raise a weight $K$ times heavier to a height $K$ times less. Another treatise, De ratione ponderis, analyzed a notion of statical moment – the product of a force into its lever arm – and anticipated modern ideas in the mechanics of the lever and the inclined plane. A third treatise, ascribed to the school of Jordanus, gave tentative expression to the theory of virtual displacements – a principle developed by Leonardo da Vinci, Descartes, and John Bernoulli, and finally formulated by J. Willard Gibbs in the nineteenth century…In 1271 Robert of England clearly stated the theory of the pendulum clock. In 1288 we hear of a great clock in a tower at Westminster, and, about same time, of similar giants in churches on the Continent; but there is no certain indication that these were fully mechanical. The first clear mention of a clock operated by pulleys, weights, and gears is dated 1320.”137

One of optic studies was the invention of spectacles. Magnifying glasses had been known to Greek antiquity, but the construction of such glasses to focus properly when near the eye seems to have awaited research in the geometry of refraction. A Chinese document of uncertain date between 1260 and 1300 speaks of glasses called ai tai, which enabled old people to read fine script. A Dominican friar, preaching at Piacenza in 1305, remarked: ‘It is not twenty years since there was discovered the art of making the glasses, which enable one to see well…I myself have spoken to the man who first discover and made the.” “The attractive power of the magnet had also been known to the Greeks. It power to indicate direction was apparently discovered by the Chinese in the first century of our era. Chinese tradition ascribes to Moslems, about 1093, the earliest use of the magnetic needle in guiding navigation. Such use was probably widespread among Moslem and Christian reference to it is in 1205, the oldest Moslem reference is in 1282; but perhaps shoes who had long known the precious secret had been in no haste to publish it. Moreover, mariners who used it were suspected of magic, and some sailors refused to sail with a captain who kept such a demonic instrument. The first known description of a pivoted floating compass occurs in an Epistola de magnete by Petrus Peregrinus in 1269. This Peter the Pilgrim recorded many experiments, advocated the experimental method, and expounded the operation of the magnet in attracting iron, magnetizing other objects; and finding the north.”138
Chemistry: “The introduction of alchemy to Latin Europe occurred on 11 February 1144, with the completion of Robert of Chester’s translation of the Arabic Book of the Composition of Alchemy. Although European craftsmen and technicians preexisted, Robert notes in his preface that alchemy was unknown in Latin Europe at the time of his writing. The translation of Arabic texts concerning numerous disciplines including alchemy flourished in 12th-century Toledo, Spain, through contributors like Gerard of Cremona and Adelard of Bath. Translations of the time included the Turba Philosophorum, and the works of Avicenna and al-Razi. These brought with them many new words to the European vocabulary for which there was no previous Latin equivalent. Alcohol, carboy, elixir, and athanor are examples. Meanwhile, theologian contemporaries of the translators made strides towards the reconciliation of faith and experimental rationalism, thereby priming Europe for the influx of alchemical thought. Saint Anselm (d.1109) put forth the opinion that faith and rationalism were compatible and encouraged rationalism in a Christian context. Peter Abelard (d. 1142) followed Anselm’s work, laying down the foundation for acceptance of Aristotelian thought before the first works of Aristotle had reached the West. And later, Robert Grosseteste (d. 1253) used Abelard’s methods of analysis and added the use of observation, experimentation, and conclusions when conducting scientific investigations. Grosseteste also did much work to reconcile Platonic and Aristotelian thinking. Through much of the 12th and 13th centuries, alchemical knowledge in Europe remained centered on translations, and new Latin contributions were not made. The efforts of the translators were succeeded by that of the encyclopaedists. Albertus Magnus and Roger Bacon are the most notable of these. Their works explained and summarized the newly imported alchemical knowledge in Aristotelian terms. There is little to suggest that Albertus Magnus (d. 1280), a Dominican, was himself an alchemist. In his authentic works such as the Book of Minerals, he observed and commented on the operations and theories of alchemical authorities like Hermes and Democritus.”

Roger Bacon (d. 1294) studied a variety of topics including optics, languages and medicine. Studying the Pseudo-Aristotelian Secretum Secretorum around 1247, “he dramatically shifted his studies towards a vision of a universal science which included alchemy and astrology. Bacon maintained that Albertus Magnus’ ignorance of the fundamentals of alchemy prevented a complete picture of wisdom. While alchemy was not more important to him than any of the other sciences, and he did not produce symbolic allegorical works, Bacon’s contributions advanced alchemy’s connections to soteriology and Christian theology. Bacon’s writings demonstrated an integration of morality, salvation, alchemy, and the prolongation of life. His correspondence with Pope Clement IV highlighted this integration, calling attention to the importance of alchemy to the papacy. Like the Greeks before him, Bacon acknowledged the division of alchemy into the practical and theoretical. He noted that the theoretical lay outside the scope of Aristotle, the natural philosophers, and all Latin writers of his time. The practical, however, confirmed the theoretical thought experiment, and Bacon advocated its uses in natural science and medicine. Soon after Bacon, the influential work of Pseudo-Geber appeared. His Summa Perfectionis remained a staple summary of alchemical practice and theory through the medieval and renaissance periods. It was notable for its inclusion of practical chemical operations alongside sulphur-mercury theory, and the unusual clarity with which they were described. By the end of the 13th century, alchemy had developed into a fairly structured system of belief. In the 14th century, alchemy became more accessible to Europeans outside the confines of Latin speaking churchmen and scholars. Alchemical discourse shifted from scholarly philosophical debate to an exposed social commentary on the alchemists themselves.” Pope John XXII forbade the false promises of transmutation made by pseudo-alchemists. In 1403, Henry IV of England banned the practice of multiplying metals (still a license allowed to make gold alchemically).
(f) **Medieval Technology.** “After the twelfth century, “medieval Europe saw a radical change in the rate of new inventions, innovations in the ways of managing traditional means of production, and economic growth. The period saw major technological advances, including the adoption of gunpowder, the invention of vertical windmills, spectacles, mechanical clocks, and greatly improved water mills, building techniques, and agriculture in general. The development of water mills from their ancient origins was impressive, and extended from agriculture to saw-mills both for timber and stone. By the time of the *Domesday Book*, most large villages had turnable mills, around 6,500 in England alone. Water-power was also widely used in mining for raising ore from shafts, crushing ore, and even powering bellows. European technical advancements from the 12th to 14th centuries were either built on long-established techniques in medieval Europe, originating from Roman and Byzantine antecedents, or adapted from cross-cultural exchanges through trading networks with the Islamic world, China, and India...Though gunpowder along with other weapons had been started by Chinese, it was the Europeans who developed and perfected its military potential, precipitating European expansion and eventual imperialism in the Modern Era...Advances in shipbuilding included the multi-masted-ships with lateen sails, the sternpost-mounted rudder and the skeleton-first hull construction. Along with new navigational techniques such as the dry compass, the Jacob's staff and the astrolabe, these allowed economic and military control of the seas adjacent to Europe and enabled the global navigational achievements of the dawning Age of Exploration. At the turn to the Renaissance, Gutenberg’s invention of mechanical printing made possible a dissemination of knowledge to a wider population, that would not only lead to a gradually more egalitarian society, but one more able to dominate other cultures, drawing from a vast reserve of knowledge and experience.”

Some technical advances were already discussed in Chapter II. Let’s see some details further. In navigation, the direction compass was either transmitted from China or the Arabs or an independent European innovation; dry compass were invented in the Mediterranean around 1300. Paper was invented in China and transmitted through Islamic Spain in the thirteenth century; in Europe, the paper-making processes was mechanized by water-powered mills and paper presses. Arabic numerals: the first recorded mention in Europe was in 976, and they were first widely published in 1202. Glass mirrors were first mentioned in 1180 by Alexander Neckham; and magnets were first referenced during 1155-60. The surgical atlas was illustrated to his anatomical description in 1345 by Guido da Vigevano; the quarantine of a 40-day-period was initially introduced by the Republic of Ragusa as a measure of disease prevention related to the Black Death in 1377. Soap came into widespread European use in the ninth century in semi-liquid form, with hard soap perfected by the Arabs in the twelfth century. In military technologies, large and complete full plates of armor appeared around 1400. The arched saddle enabled mounted knights to wield lances underarm and prevent the charge from turning into an unintentional pole-vault, which innovation gave birth to true shock cavalry, enabling fighters to charge on full gallop. Spurs were invented by the Normans and appeared at the same time as the cantled saddle in the eleventh century. Stirrups were invented by steppe nomads in Mongolia and northern China in the fourth century, and introduced into Byzantine in the sixth and in the Carolingian Empire in the eighth. As gunpowder weapons, cannon are first recorded in Europe at the seize of Metz in 1324; cornign the black powder allowed for more powerful and faster ignition of cannons, which was introduced in late fourteenth century. Mechanical artillery – counterweight trebuchet – were introduced in the Crusader states by the 1120s, Byzantium by the 1130s and in the Latin West by the second half of the century. As missile weapons, long-bowed with massed, disciplined archery was used particularly by the English to great effect against the French cavalry during the Hundred Years’ War. Steel crossbow was a European innovation in the late fourteenth century.
The Revival of Medieval Medicine: After the fall of the Roman Empire, “standard medical knowledge was based chiefly upon surviving Greek and Roman texts, preserved in monasteries and elsewhere. Many simply placed their hopes in the church and God to heal all their sicknesses. However, there were medieval doctors. They did not know much legitimate information, as they had no basic understanding of the human anatomy, and antibiotics had not yet been discovered, so there was not much, then, that they could do for their patients. Ideas about the origin and cure of disease were not purely secular, but were also based on a world view in which factors such as destiny, sin, and astral influences played as great a part as any physical cause. The efficacy of cures was similarly bound in the beliefs of patient and doctor rather than empirical evidence, so that ‘remedia physicalia’ (physical remedies) were often subordinate to spiritual intervention.”

“Medieval European medicine became more developed during the Renaissance of the 12th century, when many medical texts both on Ancient Greek medicine and on Islamic medicine were translated from Arabic during the 13th century. The most influential among these texts was Avicenna’s The Canon of Medicine, a medical encyclopedia written in circa 1030 which summarized the medicine of Greek, Indian and Muslim physicians until that time. The Canon became an authoritative text in European medical education until the early modern period. Other influential texts from Arabic authors include De Gradibus by Alkindus, the Liber pantegni by Isaac Israeli ben Solomon, and Al-Tasrif by Abulcasis. At Schola Medica Saler-nitana in Southern Italy, medical texts from Byzantium and the Arab world were readily available, translated from the Greek and Arabic at the nearby monastic centre of Monte Cassino. The Salernitan masters gradually established a canon of writings, known as the ars medicinae (art of medicine) or articella (little art), which became the basis of European medical education for several centuries. During the Crusades the influence of Islamic medicine became stronger.”

In theories of medicine, although each of these theories had distinct roots in different cultural and religious traditions, they were all intertwined in the general understanding and practice of medicine. Treatments reflected the coexistence of Christian and pagan ideas of medicine. “The underlying principle of medieval medicine was the theory of humors. This was derived from the ancient medical works, and dominated all western medicine until the 19th century. The theory stated that within every individual there were four humors, or principal fluids - black bile, yellow bile, phlegm, and blood, these were produced by various organs in the body, and they had to be in balance for a person to remain healthy. Too much phlegm in the body, for example, caused lung problems; and the body tried to cough up the phlegm to restore a balance. The balance of humors in humans could be achieved by diet, medicines, and by blood-letting, using leeches. The four humors were also associated with the four seasons, black bile-autumn, yellow bile-summer, phlegm-winter and blood-spring.” “Herbs were commonly used in salves and drinks to treat a range of maladies. The particular herbs used depended largely on the local culture and often had roots in pre-Christian religion. The success of herbal remedies was often ascribed to their action upon the humors within the body. The use of herbs also drew upon the medieval Christian doctrine of signatures which stated that God had provided some form of alleviation for every ill, and that these things, be they animal, vegetable or mineral, carried a mark or a signature upon them that gave an indication of their usefulness. For example, skullcap seeds (used as a headache remedy) can appear to look like miniature skulls; and the white spotted leaves of lungwort (used for tuberculosis) bear a similarity to the lungs of a diseased patient. A large number of such resemblances were believed to exist. Many monasteries developed herb gardens for use in the production of herbal cures,[38] and these remained a part of folk medicine, as well as being used by some professional physicians. Books of herbal remedies were produced, one of the most famous being the Welsh, Red Book of Hergest, dating from around 1400.”
“Medicine in the Middle Ages was rooted in Christianity through not only the spread of medical texts through monastic tradition but also through the beliefs of sickness in conjunction with medical treatment and theory. The church taught that God sometimes sent illness as a punishment, and that in these cases, repentance could lead to a recovery. This led to the practice of penance and pilgrimage as a means of curing illness. In the Middle Ages, some people did not consider medicine a profession suitable for Christians, as disease was often considered God-sent. God was considered to be the divine physician who sent illness or healing depending on his will. From a Christian perspective disease could be seen either as a punishment from God or as an affliction of demons. The ultimate healer in this interpretation is of course God, but medical practitioners cited both the bible and Christian history as evidence that humans could and should attempt to cure diseases. For example, the Lorsch Book of Remedies or the Lorsch Leechbook contains a lengthy defense of medical practice from a Christian perspective. Christian treatments focused on the power of prayer and holy words, as well as liturgical practice. However, many monastic orders, particularly the Benedictines, were very involved in healing and caring for the sick and dying. In many cases, the Greek philosophy that early Medieval medicine was based upon was compatible with Christianity. Though the widespread Christian tradition of sickness being a divine intervention in reaction to sin was popularly believed throughout the Middle Ages, it did not rule out natural causes. For example, the Black Death was thought to have been caused by both divine and natural origins. The plague was thought to have been a punishment from God for sinning, however because it was believed that God was the reason for all natural phenomena, the physical cause of the plague could be scientifically explained as well. One of the more widely accepted scientific explanations of the plague was the corruption of air in which pollutants such as rotting matter or anything that gave the air an unpleasant scent caused the spread of the plague. Hildegard of Bingen played an important role in how illness was interpreted."

“Monasteries were also important in the development of hospitals throughout the Middle Ages, where the care of sick members of the community was an important obligation. These monastic hospitals weren’t only for the monks who lived at the monasteries but also the pilgrims, visitors and surrounding population. The monastic tradition of herbas and botany influenced medieval medicine as well, not only in their actual medicinal uses but in their textual traditions. Texts on herbal medicine were often copied in monasteries by monks but there is substantial evidence that these monks were also practicing the texts that they were copying. These texts were progressively modified from one copy to the next, with notes and drawings added into the margins as the monks learned new things and experimented with the remedies and plants that the books supplied. Monastic translations of texts continued to influence medicine as many Greek medical works were translated into Arabic. Once these Arabic texts were available, monasteries in Western Europe were able to translate them, which in turn would help shape and redirect western medicine in the later Middle Ages. The ability for these texts to spread from one monastery or school in adjoining regions created a rapid diffusion of medical texts throughout Western Europe. The influence of Christianity continued on into the later periods of the Middle Ages as medical training and practice moved out of the monasteries and into cathedral schools, though more for the purpose of general knowledge rather than training professional physicians. The study of medicine was eventually institutionalized into the medieval universities. Even within the university setting, religion dictated a lot of the medical practice being taught...The universities in the South believed that the soul only animated the body and left immediately upon death. Because of this, the body while still important, went from being a subject to an object. However, in the north they believed that it took longer for the soul to leave as it was an integral part of the body.” Though medical practice had become professional, the foundation of religion was still an important part.
Members of religious orders were major sources of medical knowledge and cures. “There appears to have been some controversy regarding the appropriateness of medical practice for members of religious orders. The Decree of the Second Lateran Council of 1139 advised the religious to avoid medicine because it was a well-paying job with higher social status than was appropriate for the clergy. However, this official policy was not often enforced in practice and many religious continued to practice medicine. There were many other medical practitioners besides clergy. Academically trained doctors were particularly important in cities with universities. Medical faculty at universities figured prominently in defining medical guilds and accepted practices as well as the required qualifications for physicians. Beneath these university-educated physicians there existed a whole hierarchy of practitioners. Wallis suggests a social hierarchy with these university educated physicians on top, followed by learned surgeons; craft-trained surgeons; barber surgeons, who combined bloodletting with the removal of superfluities from the skin and head; itinerant specialist such as dentist and oculists; empirics; midwives; clergy who dispensed charitable advice and help; and, finally, ordinary family and neighbors. Each of these groups practiced medicine in their own capacity and contributed to the overall culture of medicine.”

“In the Medieval period the term hospital encompassed hostels for travelers, dispensaries for poor relief, clinics and surgeries for the injured, and homes for the blind, lame, elderly, and mentally ill. Monastic hospitals developed many treatments, both therapeutic and spiritual. During the thirteenth century an immense number of hospitals were built. The Italian cities were the leaders of the movement. Milan had no fewer than a dozen hospitals and Florence before the end of the fourteenth century had some thirty hospitals. Some of these were very beautiful buildings. At Milan a portion of the general hospital was designed by Bramante and another part of it by Michelangelo. The Hospital of Sienna, built in honor of St. Catherine, has been famous ever since. Everywhere throughout Europe this hospital movement spread. Virchow, the great German pathologist, in an article on hospitals, showed that every city of Germany of five thousand inhabitants had its hospital. He traced all of this hospital movement to Pope Innocent III, and though he was least papistically inclined, Virchow did not hesitate to give extremely high praise to this pontiff for all that he had accomplished for the benefit of children and suffering mankind.”

“Hospitals began to appear in great numbers in France and England. Following the French Norman invasion into England, the explosion of French ideals led most Medieval monasteries to develop a hospitium or hospice for pilgrims. This hospitium eventually developed into what we now understand as a hospital, with various monks and lay helpers providing the medical care for sick pilgrims and victims of the numerous plagues and chronic diseases that afflicted Medieval Western Europe. Benjamin Gordon supports the theory that the hospital – as we know it - is a French invention, but that it was originally developed for isolating lepers and plague victims, and only later undergoing modification to serve the pilgrim. Owing to a well-preserved 12th-century account of the monk Eadmer of the Canterbury cathedral, there is an excellent account of Bishop Lanfranc’s aim to establish and maintain examples of these early hospitals: But I must not conclude my work by omitting what he did for the poor outside the walls of the city Canterbury. In brief, he constructed a decent and ample house of stone…for different needs and conveniences. He divided the main building into two, appointing one part for men oppressed by various kinds of infirmities and the other for women in a bad state of health. He also made arrangements for their clothing and daily food, appointing ministers and guardians to take all measures so that nothing should be lacking for them.” High medieval surgeons pioneered anatomy in European universities and conducted systematic human dissections. “Unlike pagan Rome, high medieval Europe did not have a complete ban on human dissection. However, Galenic influence was still so prevalent that Mondino and his contemporaries attempted to fit their human findings into Galenic anatomy.”

Chapter IV. Economic Thought and Other Intellectual Developments

Book II The Middle Ages from 750 to 1400
Natural Philosophers: Adelard of Bath (1080-1142) is an Anglo-Saxon origin. It is believed that he left England toward the end of the 11th century for Tours. He was inspired by a wise man there with his interest in astronomy to study the science. Adelard later taught for a time at Laon, leaving Laon for travel no later than 1109. After leaving Laon, he travelled to Southern Italy and Sicily no later than 1116. Adelard also travelled extensively throughout the lands of the Crusades: Greece, West Asia, Sicily, Spain, and potentially Palestine. The time spent in these areas would help explain his fascination with mathematics and his access to Arabic scholars, Tarsus and Antioch. By 1126, Adelard returned to the West with the intention of spreading the knowledge he had gained about Arab astronomy and geometry to the Latin world. Among his original works, a trio dialogues was written to mimic the Platonic style. The earliest of these is De Eodem et Diverso (On the Same and the Different), which takes the form of a dramatic dialogue between Philocosmia, who advocates worldly pleasures, and Philosophia, whose defense of scholarship leads into a summary of the seven liberal arts. Underlining the entire work is the contrast between perceptible reality and mental concepts. “Each section of the liberal arts is divided into two parts. Presented first is a description of the allegorical figure representing the art, in which the importance of that art is indicated, followed by a summary of the doctrines of that art, as told by the allegorical figure who is presented as the founder or main proponent of the particular art.”

His most significant contribution was in the second of this trio: Questiones Naturales or Questions on Natural Science. “It can be dated between 1107 and 1133 as, in the text, Adelard himself mentions that seven years have passed since his lecturing in schools at Laon. He chooses to present this work as a forum for Arabic learning, referring often to his experiences in Antioch. He sets out seventy-six questions, in the form of a Platonic dialogue about meteorology and natural science. It was used heavily in schools into and beyond the 13th century but the teaching on natural things would ultimately be superseded by Aristotle’s writing. The text is broken up into three parts: On Plants and Brute Animals, On Man and On Earth, Water, Air, and Fire. Two of the more specific features associated with this text are (i) a preference for reason over authority in matters of science and nature (in other words, seeking solutions via reason and logic rather than through faith) and (ii) the use of the literary device of invoking Arab teachings when presenting very controversial topics (i.e. that brute animals may possess knowledge and souls)...The final section in his trilogy is a treatise on hawking called De Avibus Tractatus (Treatise on Birds). It is a medical text that addresses disease from head-to-toe. While it has been argued that this treatise was not widely distributed, an investigation of later Latin and French treatises reveals a number of excerpts from Adelard’s work.”

The remainder of Adelard's original works did not involve the persona of his nephew. “He wrote a treatise on the use of the abacus called Regulae Abaci, which was likely written very early in his career because it shows no trace of Arab influence. This treatise is believed to be proof that Adelard was connected to the Exchequer table that was used for monetary calculations in the medieval period. Further evidence for this can be found in the Pipe Roll of Henry I, which shows that he had received a discharge from the murder fine (a fine levied on inhabitants of a certain area based on the murder of a Norman that occurred in a generally accessible field in that same area) levied on the community of Wiltshire in 1130, though there is no other proof for this fact. The work that Adelard of Bath is known for in the Latin world is his translation of the astronomical tables of al-Khwarizmi, the first widely accessible Latin translation of the Islamic ideas about algebra. In the Middle Ages he was known for his rediscovery and teaching of geometry, earning his reputation when he made the first full translation of Euclid’s Elements and began the process of interpreting the text for a Western audience.” It is clear that his ideas most notably manifested in the later works of Robert Grosseteste and Roger Bacon.
William of Conches (1090-1154) was born in Conches, Normandy. “His teaching activity extended from c. 1120 to 1154, and about the year 1145 he became the tutor of Henry Plantagenet. It is possible, but uncertain, that he was teaching at Chartres before that. Warned by a friend of the danger implied in his Platonic realism as he applied it to theology, he took up the study of Islamic philosophy and physical science. When and where he died is a matter of uncertainty. William devoted much attention to cosmology and psychology. Having been a student of Bernard of Chartres, he shows the characteristic Humanism, tendency towards Platonism, and taste for natural science which distinguish the Chartrains. He is one of the first of the medieval Christian philosophers to take advantage of Islamic physical and physiological lore, to which he had access in the translations by Constantine the African. William of St. Thierry, who had encouraged Bernard of Clairvaux to prosecute Abelard, in another letter to Bernard attacked William’s De philosophia mundi for having a modalist view of the Holy Trinity. William in consequence revised some controversial parts in the Dragmaticon.” “There is a good deal of discussion regarding the authorship of the works ascribed to William. It seems probable, however, that he wrote the encyclopedic De philosophia mundi and the related dialogue Dragmaticon, as well as glosses on Plato’s Timaeus, on Boethius’s Consolation of Philosophy, on Priscian’s Institutiones grammaticae, and on Macrobius’s Commentary on the Dream of Scipio. He was probably also the author of a lost treatise Magna de naturis philosophia.” A work on ethics, the Moralium dogma philosophorum, was attributed to him, but his authorship is now rejected by most scholars.\textsuperscript{151}

Among his writings, in natural philosophy, the De philosophia mundi is divided into four books: physics, astronomy, geography, meteorology and medicine. “William explains the world as composed of elements, which he defines as "the simplest and minimum part[s] of any body - simple in quality, minimum in quantity. He identifies the elements with the traditional four elements (fire, air, water, earth) but (following Constantine the African) not as they are perceived, since as such they are neither simple in quality nor minimum in quantity: earth, for example, contains something hot, something cold, something dry and something wet at the same time. Pure elements are not to be perceived, says William, but to be grasped by reason, through an abstract division of the sensible bodies. Each of these pure elements has two of the four basic qualities: earth is cold and dry, water is cold and humid, air is hot and humid and fire is hot and dry. The perceivable elements, called elementata, are made of pure elements: the sensible earth especially of pure earth, the sensible water especially of pure water, and so on. The discussion of meteorology includes a description of air becoming less dense and colder as the altitude increases, and William attempts to explain the circulation of the air in connection with the circulation of the oceans. The discussion of medicine deals chiefly with procreation and childbirth. This work influenced Jean de Meung, the author of the second part of the Roman de la Rose.”\textsuperscript{152}

Like Adelard, he did not recognize the church fathers as authorities in natural philosophy. In his Dragmaticon, he firmly believes that “God had created a rational universe that operated in a lawful manner. It was the task of the natural philosopher to discover the causes by which the universe operated.” In his Gloss on Boethius, “the author of truth are silent on matters of natural philosophy, not because these matters are against the faith, but because they have little to do with the strengthening of such faith. Adelard and William were natural philosophers when the science was in the shallow base of knowledge and when natural philosophy was limited by religious doctrine associated with biblical creation. But history moves with two track courses. “Despite all the anti-medieval passages cited to this point, the Middle Ages was one of the most innovative periods in human history….Among the innovations in technology were eyeglasses, the magnetic compass, the mechanical clock, firearms and the cannon, ship rudders, cranks to convert continuous rotary motion to reciprocating motion, and the printing press.”\textsuperscript{153}
Robert Grosseteste (1175-1253) was an English statesman, scholastic philosopher, theologian, scientist and Bishop of Lincoln, as discussed in Chapter III. In natural philosophy, “It has been argued that Grosseteste played a key role in the development of the scientific method. Grosseteste did introduce to the Latin West the notion of controlled experiment and related it to demonstrative science, as one among many ways of arriving at such knowledge. Although Grosseteste did not always follow his own advice during his investigations, his work is seen as instrumental in the history of the development of the Western scientific tradition. Grosseteste was the first of the Scholastics to fully understand Aristotle's vision of the dual path of scientific reasoning: generalising from particular observations into a universal law, and then back again from universal laws to prediction of particulars. Grosseteste called this resolution and composition. So, for example, looking at the particulars of the moon, it is possible to arrive at universal laws about nature. And conversely once these universal laws are understood, it is possible to make predictions and observations about other objects besides the moon. Grosseteste said further that both paths should be verified through experimentation to verify the principles involved. These ideas established a tradition that carried forward to Padua and Galileo Galilei in the 17th century.”

“As important as resolution and composition would become to the future of Western scientific tradition, more important to his own time was his idea of the subordination of the sciences. For example, when looking at geometry and optics, optics is subordinate to geometry because optics depends on geometry. Thus Grosseteste concluded, following very much in what Boethius had argued, that mathematics was the highest of all sciences, and the basis for all others, since every natural science ultimately depended on mathematics. He supported this conclusion by looking at light, which he believed to be the "first form" of all things, the source of all generation and motion. Hence, since light could be reduced to lines and points, and thus fully explained in the realm of mathematics, mathematics was the highest order of the sciences. Optic studies from Roger Bacon's *De multiplicatione specierum*. The diagram shows light being refracted by a spherical glass container full of water. Grosseteste's work in optics was also relevant and would be continued by Roger Bacon, who often mentioned his indebtedness to him although there is no proof that the two ever met. In *De Iride* Grosseteste writes: This part of optics, when well understood, shows us how we may make things a very long distance off appear as if placed very close, and large near things appear very small, and how we may make small things placed at a distance appear any size we want, so that it may be possible for us to read the smallest letters at incredible distances, or to count sand, or seed, or any sort of minute objects."

He applied a scientific method to analyze any natural phenomenon into simplest components by framing hypotheses for experiments. His *Impressions of the Elements* considers light to be the efficient cause of local motion and his *Heat of the Sun* explains that the sun generates heat through a concentration of rays not through the motion of the sun. In *An Inquiry into the Causes of the Tides*, he wrote “That the moon alone, and not some planet or images of the fixed stars, is the cause of this motion is clear for this reason, what the motion of the sea follows the motion of the moon more closely than that of any other planet.” In the *Theory of Rainbow*, he explains that “the sun’s rays pass the air containing the cloud, the cloud itself, the upper and rarer moisture, and the lower and denser moisture; and the light will be refracted as it passes from one of these to the other…As the rays are progressively weakened by the series of refractions, the order of colors form red to violet appears.” His *De Luce* (On Light) “explores the nature of matter and the cosmos. Four centuries before Isaac Newton proposed gravity and seven centuries before the Big Bang theory, Grosseteste described the birth of the Universe in an explosion and the crystallization of matter to form stars and planets in a set of nested spheres around Earth. *De Luce* is the first attempt to describe the heavens and Earth using a single set of physical laws.”
Albert Magnus (1193-1280), known as Albert the Great, was a German Dominican friar and a Catholic bishop, and the teacher of Thomas Aquinas as discussed in Chapter III. "In the centuries since his death, many stories arose about Albert as an alchemist and magician. Much of the modern confusion results from the fact that later works, particularly the alchemical work known as the Secreta Alberti…were falsely attributed to Albertus by their authors to increase the prestige of the text through association. On the subject of alchemy and chemistry, many treatises relating to alchemy have been attributed to him, though in his authentic writings he had little to say on the subject, and then mostly through commentary on Aristotle. For example, in his commentary, De mineralibus, he refers to the power of stones, but does not elaborate on what these powers might be. A wide range of Pseudo-Albertine works dealing with alchemy exist, though, showing the belief developed in the generations following Albert's death that he had mastered alchemy, one of the fundamental sciences of the Middle Ages. These include Metals and Materials; the Secrets of Chemistry; the Origin of Metals; the Origins of Compounds, and a Concordance which is a collection of Observations on the philosopher's stone; and other alchemy-chemistry topics, collected under the name of Theatrum Chemicum. He is credited with the discovery of the element arsenic and experimented with photosensitive chemicals, including silver nitrate. He did believe that stones had occult properties, as he related in his work De mineralibus. However, there is scant evidence that he personally performed alchemical experiments. According to legend, Albert is said to have discovered the philosopher's stone and passed it to his pupil Thomas Aquinas, shortly before his death. Albert does not confirm he discovered the stone in his writings, but he did record that he witnessed the creation of gold by transmutation. Given that Thomas Aquinas died six years before Albert's death, this legend as stated is unlikely. In his Little Book of Alchemy Albert said that alchemic gold and iron lack the properties of natural gold and iron, alchemical iron not being magnetic and alchemical gold turning to powder after several ignitions."

"Albert was deeply interested in astrology, as has been articulated by scholars such as Paola Zambelli. Throughout the Middle Ages - and well into the early modern period - astrology was widely accepted by scientists and intellectuals who held the view that life on earth is effectively a microcosm within the macrocosm (the latter being the cosmos itself). It was believed that correspondence therefore exists between the two and thus the celestial bodies follow patterns and cycles analogous to those on earth. With this worldview, it seemed reasonable to assert that astrology could be used to predict the probable future of a human being. Albert made this a central component of his philosophical system, arguing that an understanding of the celestial influences affecting us could help us to live our lives more in accord with Christian precepts. The most comprehensive statement of his astrological beliefs is to be found in a work he authored around 1260, now known as the Speculum astronomiae. However, details of these beliefs can be found in almost everything he wrote, from his early De natura boni to his last work, the Summa theologiae.” In his Commentary on Aristotle’s On the Heavens, Albert reveals the desire to keep natural philosophy and theology separate, when, in a discussion inquiring whether heaven is un-generable and in corruptible, he explains: “Another opinion was that of Plato who says that the heaven was derived from the first cause by creation from nothing, and this opinion is also the opinion of the three laws, namely of the Jews, Christians, and Saracens. And thus they say that the heaven is generated, but not from something.” Although Albert was wrong to attribute to Plato a belief in a creation from nothing, it is noteworthy that he refuses to include a discussion of the doctrine of creation from nothing in a straightforward treatise on natural philosophy. Creation from nothing was a divine, supernatural act and therefore not a legitimate topic for a book on natural philosophy. This did Albert Magnus separate the sciences of physics, or natural philosophy, from theology.” His student Aquinas would have undoubtedly agreed with his masters sentiments.156
Roger Bacon (1214-92): As discussed in Chapter III, in his *Opus Majus*, Bacon deals with Mathematics in Part IV, optics in Part V, and experimental science in Part VI. “It is important to see his main contribution to science as one who advocated scientific education in an Arts Faculty that was predominantly dedicated to linguistic arts. Bacon had a very wide reading knowledge of most of the newly translated work from Greek, Jewish, and Islamic Philosophy and Science. His major claim to fame in science is that he is the first Latin Western thinker to comprehend and write on most of the ancient sources of optics. In brief, he initiates the tradition of Optics/*Perspectiva* in the Latin world. This tradition would be formulated as teaching text by his contemporaries Pecham and Witelo, and then taken up by the tradition leading to Kepler and Descartes. In his *Perspectiva* and *De scientia experimentalis*, Bacon outlines a sketch for a scientific method, one that takes optics as the model for an experimental science.” His *Perspectiva* was added to the four traditional university subjects of the *quadrivium*: arithmetic, geometry, astronomy, music.

“Opus maius, Part four, deals with mathematics and the applications of mathematics. Bacon presents reasons for a reduction of logic to mathematics and sees mathematics as the key to an understanding of nature. Clearly, he is proclaiming the usefulness of mathematics for knowledge; he is not doing mathematical theory. Following his abbreviation of the *De multiplicatione specierum*, which shows how mathematics might be applied to physics, he deals with the application of astronomy/astrology to human affairs, the uses of mathematics in religious rites as in chronology, music, symbolism, calendar reform, and geographical knowledge, and a resume of astrology. It used to be thought that Bacon was a Platonist in his view of the absolute priority of mathematics. More recently, that view has been seriously qualified. He does not reduce physics to mathematics. Indeed, his explicit work on mathematics, the *Communia mathematica*, is not an exercise in mathematics, but a presentation of the "common notions" that are important for a variety of mathematical practices. Bacon himself acknowledges those who were better mathematicians, namely, John of London, Pierre de Maricourt, and Campanus of Novara. In general, Bacon is more interested in how mathematics can contribute to knowledge of the world as an aid to missionary activity. He sent a map of the world to the Pope.”

“Bacon was very interested in the applications of astronomy/astrology to human events. Federici Vescovini has now provided the essential context and linkage between medieval magic and philosophy, enabling scholars to grasp the dimensions of fate and freedom as understood by medieval philosophers and theologians. Although committed to Freedom of the will, Bacon held to a deterministic notion of causation in nature based on the *Introductorium Maius in Astronomiam* of the Islamic authority on Astrology, Abu Ma’ Shar (Albumassar), on the *De radiis* of Al-Kindi, and on the *Centiloquium* by Pseudo-Ptolemy (Ahmed Ibn Yusuf). And since he held to a doctrine of universal radiation in nature, he had to account for the influence of the heavens on the human body and hence indirectly on the human mind. Much of the polemic in his later works consists of a justification of this interest in an astrologically necessitated universe in the face of traditional theological objections. These works play a big role as background for his natural philosophy in *De multiplicatione specierum*. He was also interested in alchemy. It was his determined interest in some of these areas of study that led to disagreement with his superiors in the Franciscan Order, specifically, Bonaventure.”

Bacon was largely ignored by his contemporaries in favor of other scholars such as Albert Magnus, Bonaventure, and Thomas Aquinas. By early modern period, he was considered the epitome of a wise and subtle professor of forbidden knowledge. However, in the course of twenty century, the philosophical understanding of the role of experiment in the sciences was substantially modified. Bacon often mentioned his debt to the work of Robert Grosseteste: his work on optics and the calendar followed him. “He was clearly not an isolated genius.”
Thomas Bradwardine (1290-1349) was an English cleric, scholar, mathematician, physicist, courtier, and Archbishop of Canterbury. Bradwardine was one of these Oxford Calculators, studying mechanics, and they distinguished kinematics from dynamics, emphasizing kinematics, and investigating instantaneous velocity. “They first formulated the mean speed theorem: a body moving with constant velocity travels the same distance as an accelerated body in the same time if its velocity is half the final speed of the accelerated body. They also demonstrated this theorem - the foundation of The Law of Falling Bodies - long before Galileo, who is generally credited with it. It is written that “The now published sources prove to us, beyond contention, that the main kinematical properties of uniformly accelerated motions, still attributed to Galileo by the physics texts, were discovered and proved by scholars of Merton college...In principle, the qualities of Greek physics were replaced, at least for motions, by the numerical quantities that have ruled Western science ever since. The work was quickly diffused into France, Italy, and other parts of Europe. Almost immediately, Giovanni di Casale and Nicole Oresme found how to represent the results by geometrical graphs, introducing the connection between geometry and the physical world that became a second characteristic habit of Western thought ...In Tractatus de proportionibus (1328), Bradwardine extended the theory of proportions of Eudoxus of Cnidus to anticipate the concept of exponential growth, later developed by the Bernoulli and Euler, with compound interest as a special case. Arguments for the mean speed theorem (above) require the modern mathematical concept of limit, so Bradwardine had to use arguments of his day. Mathematician and mathematical historian Carl Benjamin Boyer writes, Bradwardine developed the Boethian theory of double or triple or, more generally, what we would call 'n-tuple' proportion. Boyer also writes that the works of Bradwardine contained some fundamentals of trigonometry gleaned from Muslim sources. Yet Bradwardine and his Oxford colleagues did not quite make the breakthrough to modern science. The most essential missing tool was calculus.”

John Buridan (1295-1363) studied and taught at Paris, developed the concept of impetus dealing with the motion of matter and how it is affected by applied forces. He wrote Questions on the Eight Books of the Physics of Aristotle, and his pupil Albert of Saxony rewrote and published a book in 1516, so that Galileo may meet the thought of Buridan through Albert’s work. "Buridan's major contribution here was to develop and popularize the theory of impetus, or impressed force, to explain projectile motion. Rejecting the discredited Aristotelian idea of antiperistasis, according to which the tendency of a thrown projectile to continue moving is due to a proximate but external moving cause, he argues that only an internal motive force, transmitted from the mover to the projectile, could explain its continued motion. The theory of impetus probably did not originate with Buridan, but his account appears to be unique in that he entertains the possibility that it might not be self-dissipating: after leaving the arm of the thrower, the projectile would be moved by an impetus given to it by the thrower, he says, and would continue to be moved as long as the impetus remained stronger than the resistance, and would be of infinite duration were it not diminished and corrupted by a contrary force resisting it or by something inclining it to a contrary motion. He also contends that impetus is a variable quality whose force is determined by the speed and quantity of the matter in the subject, so that the acceleration of a falling body can be understood in terms of its gradual accumulation of units of impetus. But despite its revolutionary implications, Buridan did not use the concept of impetus to transform the science of mechanics. He was not, as Duhem argued, a forerunner of Galileo. He remained unapologetically Aristotelian in too many other respects, continuing to hold that motion and rest are contrary states of bodies and that the world is finite in extent. Buridan seems to have been a philosopher who, though well aware of the shortcomings of the Aristotelian natural philosophy, tried to reshape as much of it as he could in the face of a rapidly mechanizing worldview."
Nicole Oresme (1320-1382) was born in the vicinity of Caen, Normandy. He attended the royally sponsored and subsidized College of Navarre, an institution for students too poor to pay their expenses while studying at the University of Paris, makes it probable that the came from a peasant family. Oresme studies the arts in Paris, together with John Buridan (the so-called founder of the French school of natural philosophy). In 1348, he was a student of theology in Paris. In 1356, he received his doctorate and in the same year he became grand master of the College of Navarre. In 1364, he was appointed dean of the Cathedral of Rouen. Around 1369, he began a series of translations of Aristotelian works at the request of Charles V, who granted him a pension in 1371 and, with royal support, was appointed bishop of Lisieux in 1377.

Cosmology: “In his *Livre du ciel et du monde* Oresme discussed a range of evidence for and against the daily rotation of the Earth on its axis...he maintained that if the Earth were moving and not the celestial spheres, all the movements that we see in the heavens that are computed by the astronomers would appear exactly the same as if the spheres were rotating around the Earth. He rejected the physical argument that if the Earth were moving the air would be left behind causing a great wind from east to west. In his view the Earth, Water, and Air would all share the same motion. As to the scriptural passage that speaks of the motion of the Sun, he concludes that "this passage conforms to the customary usage of popular speech" and is not to be taken literally. He also noted that it would be more economical for the small Earth to rotate on its axis than the immense sphere of the stars...he concluded that none of these arguments were conclusive and everyone maintains, and I think myself, that the heavens do move and not the Earth.”

Critique of astrology: Oresme criticized astrology in his *Livre* with six parts. “These first three parts are what Oresme considers the physical influences of the stars and planets on the earth, and while he offers critiques of them, he accepts that effects exist. The last three parts are what Oresme considers to concern fortune. They are interrogations, meaning asking the stars when to do things such as business deals; elections, meaning choosing the best time to do things such as getting married or fighting a war; and nativities, meaning the natal astrology with birth charts that forms much of modern astrological practice. Oresme classifies interrogations and elections as "totally false" arts, but his critique of nativities is more measured. He denies that any path is pre-determined by the heavenly bodies, because humans have free will, but he accepts that the heavenly bodies can influence behavior and habitual mood, via the combination of humors in each person...Oresme's skepticism is strongly shaped by his understanding of the scope of astrology. He accepts things a modern skeptic would reject, and rejects some things - such as the knowability of planetary movements, and effects on weather - that are accepted by modern science.”

Mathematics: In his *Tractatus de configurationibus qualitatum et motuum*, in a quality, such as heat, he distinguished the *intensio* (the degree of heat at each point) and the *extensio* (as the length of the heated rod). “These two terms were often replaced by *latitudo* and *longitudo*. For the sake of clarity, Oresme conceived the idea of visualizing these concepts by plane figures, approach-ing what we would now call rectangular coordinate. The intensity of the quality was represented by a length or *latitudo* proportional to the intensity erected perpendicular to the base at a given point on the base line, which represents the *longitudo*. Oresme proposed that the geometrical form of such a figure could be regarded as corresponding to a characteristic of the quality itself. Oresme defined a uniform quality as that which is represented by a line parallel to the longitude, and any other quality as difform. Uniformly varying qualities are represented by a straight line inclined to the axis of the longitude, while he described many cases of nonuniformly varying qualities. Oresme extended this doctrine to figures of three dimensions. He considered this analysis applicable to many different qualities such as hotness, whiteness, and sweetness. Significantly for later developments, Oresme applied this concept to the analysis of local motion.”
The Latin Revival in History and Literature: “Every age is an age of romance, for men cannot live by bread alone, and imagination is the staff of life. Perhaps the twelfth and thirteenth centuries in Europe were slightly more romantic than most periods. Besides inheriting all the mystic creatures of Europe’s faery lore, they accepted the Christian epic in all the beauty and terror of its vision, they made an art and religion of love and war, they saw the Crusades, they imported a thousand tales and wonders from the East. In any case they wrote the longest romances known to history. The growth of wealth and leisure and laic literacy, the rise of towns and the middle class, the development of universities, the exaltation of woman in religion and chivalry – all furthered the literary flowering. As schools multiplies, Cicero, Virgil, Horace, Ovid, Livy, Sallust, Lucan, Seneca, Statius, Juvenal… brightened with their art and exotic world many a pedagogic or monastic retreat, perhaps, here and there, some palace bower. From Jerome to Alcuin to Heloise and Hildebert, Christian souls stole minutes from their Hours to chant the Aeneid’s music silently. The University of Orleans particularly cherished the classics of pagan Rome, and a horrified puritan complained that it was the old gods, not Christ or Mary, that were worshiped there. The twelfth century was almost the Age of Ovid; he dethroned then the Vigil whom Alcuin had made the poet laureate of Charlemagne’s court, and monks and ladies and wandering scholars alike read with delight the Metamorphoses, the Heroïdes, and the Art of Love. We can forgive many a Benedictine carouse to the monks who preserved these demand souls so lovingly, and taught them so devotedly to the reluctant, then grateful, young.” From such classic studies a medieval Latin arose whose diversity and interest are among the most pleasant surprises of literary exploration. St. Bernard, who thought so poorly of intellectual accomplishments, wrote letters of loving tenderness, vituperative eloquence, and masterly Latin. The sermons of Peter Damian, Bernard, Abelard, and Berthold of Regensburg kept Latin a language of living power.”

The Church dominated all education in Western and Central Europe with the language of Latin, and all educated people used Latin in medieval writings, while the common people used their respective vernaculars. “The monastic chroniclers wrote terrible Latin, but they made no claim to offer esthetic thrills. They recorded first of all the growth and history of their own abbeys – the elections, buildings, and deaths of abbots, the miracles and quarrels of the monks; they added notes on the eclipses, comets, droughts, floods, famines, plagues, and portents of their time; and some of them expanded to include national, even international, events. Few scrutinized their sources critically, or inquired into causes; most of them were carelessly inaccurate, and added a cipher or two to bring dead statistics to life; all dealt in miracles, and showed an amiable credulity. So French chroniclers assumed that France had been settled by noble Trojans, and that Charlemagne had conquered Spain and captured Jerusalem. The Gesta Francorum (c. 1100) attempted a relatively honest account of the First Crusade, but the Gesta Romanorum (c. 1280) provided frankly fictional history for Chaucer, Shakespeare, and a thousand romancers. Geofrey of Monmouth (c. 1100-54) made his Historia Brittonum a kind of national mythology, in which poets found the legends of King Lear and Arthur, Merlin, Lancelot, Tristan, Perceval, and the Holy Grail. Still living literature, however, are the gossipy and guileless chronicles of Jocelyn of Bury St. Edmunds (d. 1200) and Fra Salimbene of Parma (c. 1280).” About 1208 Saxo Grammaticus dedicated to Archbishop Absalon of Lund his Gesta Danorum or Deeds of the Danes that is the most ambitious literary undertaking of medieval Denmark and is an essential source for the nation’s early history. “It describes Danish history and to some degree Scandinavian history in general, from prehistory to the late 12th century. In addition, Gesta Danorum offers singular reflections on European affairs in the High Middle Ages from a unique Scandinavian perspective, supplementing what has been handed down by historians from Western and Southern Europe.” In these centuries, more Latin historians rose from chronicles to history as follows.
William of Malmesbury (1095-1143) was born in Wiltshire. His father was Norman and his mother English. He spent his whole life in England and his adult life as a monk at Malmesbury Abbey in Wiltshire, England. During the course of his studies, he amassed a collection of medieval histories, which inspired in him the idea for a popular account of English history modeled on the Ecclesiastical History of the English People of Bede. William completed his Gesta regum Anglorum (Deeds of the kings of the English) spanned from A.D. 449 to 1120, in which he wrote of William the Conqueror: “He was of just stature, ordinary corpulence, fierce of presence, his forehead was bare of hair; of such great strength of arm that it was often a matter of surprise, that no one was able to draw his bow, which himself could bend when his horse was in full gallop; he was majestic whether sitting or standing, although the protuberance of his belly deformed his royal person; of excellent health so that he was never confined with any dangerous disorder, except at the last; so given to the pleasures of the chase, that as I have before said, ejecting the inhabitants, he let a space of many miles grow desolate that, when at liberty from other avocations, he might there pursue his pleasures. His anxiety for money is the only thing on which he can deservedly be blamed. This he sought at all opportunities of scraping together, he cared not how; he would say and do some things and indeed almost anything, unbecoming to such great majesty, where the hope of money allured him. I have here no excuse whatever to offer, unless it be, as one has said, that of necessity he must fear many, whom many fear… William’s first edition of the book was followed by the Gesta pontificum Anglorum (Deeds of the English Bishops) in 1125. For this vivid descriptive history of abbeys and bishoprics, dwelling upon the lives of the English prelates saints, notably the learned wonder-working Aldhelm, abbot of Malmesbury, William travelled widely in England.” Beginning about 1140 William continued his chronicles with the Historia Novella or Modern History and The Anarchy of King Stephen’s Reign.168

Orderic Vitalis (1075-1142) was born in Atcham, England, at the age of eleven was entrusted as an oblate to the Abbey of Saint-Evroul in the Duchy of Normandy, where he was admitted into a monastery. He became a deacon in 1093, and a priest in 1107. He turned his attention at an early date to literature, and for many years appears to have spent his summers in the scriptorium. Around 1110 and 1115, his superiors ordered him to write the history of Saint-Evroul, which work became a general history of his own age: the Historia Ecclesiastica (Ecclesiastical History). “(i) Books I and II, which are historically valueless, give the history of Christianity from the birth of Christ. After 855 this becomes a bare catalogue of popes, ending with the name of Innocent I. These books Orderic added in 1136-41 as an afterthought to the original scheme. (ii) Books III through VI form a history of Saint-Evroul, the original nucleus of the work. Planned before 1122, they were mainly composed in the years 1123-31. The fourth and fifth books contain long digressions on the deeds of William the Conqueror in Normandy and England. Before 1067 these are of little value, being chiefly derived from two extant sources: William of Jumièges’ Gesta Normannorum Ducum and William of Poitiers’ Gesta Guillelmi. For the years 1067-71 Orderic follows the lost portion of the Gesta Guillelmi, and is therefore of the first importance. From 1071 he begins to be an independent authority. Notices of political events in this part of his work are far less copious than in the later books. (iii) Books VII through XIII relegate ecclesiastical affairs to the background. In this section, after sketching the history of France under the Carolingian and early Capet dynasties, Orderic takes up the events of his own times, starting from about 1082. He has much to say concerning the Empire, the papacy, the Normans in Sicily and Apulia, the First Crusade (for which he follows Fulcher of Chartres and Baudri of Bourgueil). But his chief interest is in the histories of the three brothers Robert Curthose, Duke of Normandy, William Rufus and Henry I of England. He continues his work, in the form of annals, up to the defeat and capture of Stephen of England at Lincoln in 1141.”169
Chapter IV. Economic Thought and Other Intellectual Developments

Otto of Freising (1114-58) was the fifth son of Leopold III, margrave of Austria, by his wife Agnes, daughter of the emperor Henry IV. He studied in Paris, where he took an especial interest in philosophy, and he served as provost of a new foundation in Austria. “Having entered the Cistercian order, Otto convinced his father to found Heiligenkreuz Abbey in 1133, thus bringing literacy and sophisticated agriculture to the region that would become Vienna. He became abbot of the Cistercian monastery of Morimond in Burgundy about 1136, and soon afterwards was elected bishop of Freising. This diocese, and indeed the whole of Bavaria, was then disturbed by the feud between the Welfs and the Hohenstaufen, and the church was in a deplorable condition; but a great improvement was brought about by the new bishop in both ecclesiastical and secular matters. In 1147 he took part in the disastrous crusade of Conrad III. The section of the crusading army led by the bishop was decimated, but Otto reached Jerusalem, and returned to Bavaria.” Otto wrote two important historical works. (i) *Chronica de duabus civitatibus* (Chronicle of the Two Cities) was written during the time of the civil war in Germany (1143-45): “it contrasts Jerusalem and Babel, the heavenly and the earthly kingdoms, but also contains much valuable information about the history of his own time...In the *Chronica*, Otto reports a meeting he had with Bishop Hugh of Jabala, who told him of a Nestorian Christian king in the east named Prester John. It was hoped this monarch would bring relief to the crusader states: this is the first documented mention of Prester John.” (ii) *Gesta Friderici Imperatoris* (Deeds of Emperor Frederick) was written at the request of Frederick I, and prefaced by a letter from the emperor to the author. “The *Gesta* is in four books, the first two of which were written by Otto, and the remaining two, or part of them, by his pupil Ragewin, or Rahewin; it has been argued that the third book and the early part of the fourth were also the work of Otto. Beginning with the quarrel between Pope Gregory VII and the emperor Henry IV, the first book takes the history down to the death of Conrad III in 1152.”

William of Tyre (1130-86): His parents, probably originated in either France or Italy, were likely merchants who had settled in the Kingdom of Jerusalem (founded in 1099 at the end of the First Crusade), where he was born and grew up. “As a child William was educated in Jerusalem, at the cathedral school in the Church of the Holy Sepulchre. The scholaster, or school-master, John the Pisan, taught William to read and write, and first introduced him to Latin. From the *Historia* it is clear that he also knew French and possibly Italian.” Around 1145 William went to Europe to continue his education in the schools of France and Italy, especially in those of Paris and Bologna. He studied liberal arts and theology in Paris and Orleans for about ten years; for six years, theology with Peter Lombard and Maurice de Sully; and afterward civil and canon law in Bologna. He was as well-educated as any European cleric. Returning to the Holy Land in 1165, he became canon of the cathedral at Acre, and archdeacon of the cathedral in 1167. Visiting Rome, he returned to Jerusalem in 1170, when he may have been commissioned by King Amalric to write a history of the kingdom. William wrote a Latin chronicle during 1170-84 that is *Historia rerum in partibus transmarinis gestarum* (History of Events Overseas). It contains twenty-three books: the final book covering 1183-4 has only a prologue and one chapter, so it is either unfinished or the rest of the pages were lost. “The first book begins with the conquest of Syria by Umar in the seventh century, but otherwise the work deals with the advent of the First Crusade and the subsequent political history of the Kingdom of Jerusalem. It is arranged, but was not written, chronologically; the first sections to be written were probably the chapters about the invasion of Egypt in 1167, which are extremely detailed and were likely composed before the Fatimid dynasty was overthrown in 1171. Much of the *Historia* was finished before William left to attend the Lateran Council, but new additions and corrections were made after his return in 1180, perhaps because he now realized that European readers would also be interested in the history of the kingdom. In 1184 he wrote the Prologue and the beginning of the twenty-third book.”
Matthew Paris (1200-59) was a Benedictine monk of St. Alvans Abbey in Hertfordshire. As a historiographer to his abbey, and later to King Henry III, he composed his lively Chronica majora, covering the major events of European history between 1235 and 1259. He was of English birth, and his life was mainly spent in this religious house. “In 1248, Paris was sent to Norway as the bearer of a message from Louis IX to Haakon IV; he made himself so agreeable to the Norwegian sovereign that he was invited to superintend the reformation of the Benedictine Nidarholm Abbey outside Trondheim.” “Paris's manuscripts mostly contain more than one text, and often begin with a rather random assortment of prefatory full-page miniatures. Some have survived incomplete, and the various elements now bound together may not have been intended to be so by Paris. Unless stated otherwise, all were given by Paris to his monastery. The monastic libraries were broken up at the Dissolution.” The Chronica Majora has two volumes, containing annals from the creation of the world up to the year 1153. “The content up to 1234 or 1235 is based on the main on Roger of Wendover’s Flores Historiarum, with additions; after that date the material is Paris’s own, and written in his own hand from the annals for 1213 onward…A continuation of the Chronica, from 1254 until Paris’s death in 1259 is bound with the Historia Anglorum in the British Library.”

“He wrote with clarity, accuracy, and unexpected partialities; he condemned the avarice that had alienated the people from the pope, and favored Frederick II against the papacy. He crowded his pages with miracles, and told the story of the Wandering Jew (1228), but he frankly recorded the skepticism with which Londoners viewed the transference of some drops of Christ’s blood to Westminster Abbey (1247). He drew for his book several maps of England, the best of the period, and may himself have made the drawings that illustrate his work. We admire his industry and learning; but his sketch of Mohammed (1236) is an astonishing revelation of how ignorant an educated Christian could be of Islamic history.”

Geoffroy de Villehardouin (1160-1212): “A layman and a soldier, he was appointed Marshal of Champagne from 1185 and joined the Crusade in 1199 during a tournament held by Count Thibaud III of Champagne. Thibaud named him one of the ambassadors to Venice to procure ships for the voyage, and he helped to elect Boniface of Montferrat as the new leader of the Crusade when Thibaud died. Although he does not say so specifically in his own account, he probably supported the diversion of the Crusade first to Zara and then to Constantinople. While at Constantinople he also served as an ambassador to Isaac II Angelus, and was in the embassy that demanded that Isaac appoint Alexius IV co-emperor. After the conquest of the Byzantine Empire in 1204 he served as a military leader, and led the retreat from the Battle of Adrianople in 1205 after Baldwin I was captured by the forces of the Second Bulgarian Empire. In recognition of his services, Boniface of Montferrat gave to Geoffrey the city of Messinopolis in Thrace. After the Crusade, he was named Marshal of the Latin Empire. In 1207 he began to write his chronicle of the Crusade, On the Conquest of Constantinople. It was in French rather than Latin, making it one of the earliest works of French prose. Villehardouin's account is generally read alongside that of Robert of Clari, a French knight of low station, Niketas Choniates, a high-ranking Byzantine official and historian who gives an eyewitness account, and Gunther of Pairs, a Cistercian monk who tells the story from the perspective of Abbot Martin who accompanied the Crusaders. Villehardouin’s nephew Geoffrey I of Villehardouin went on to become Prince of Achaea in Morea in 1209. Villehardouin himself seems to have died shortly afterwards.” As a noble warrior, of little formal education, not knowing the tricks of rhetoric taught in the schools, he dictated his Conquête de Constantinople – his simple directness and matter-of-fact precision made his book a classic of historiography. “Not that he was impartial; he played to intimate a role in the Fourth Crusade to see that picturesque treachery with an objective eye; but he was there, and saw and felt events with an immediacy that gave his book a living quality half immune to time.”

Chapter IV. Economic Thought and Other Intellectual Developments
Jean de Joinville (1224-1317) belonged to a noble family from Champagne. He received an education benefiting a young noble at the court of Theobald IV, court of Champagne. On the death of his father, he became seneschal of Champagne. “In 1241, he accompanied Theobald to the court of the king of France, Louis IX. In 1244, when Louis organized the Seventh Crusade, Joinville decided to abandon his family to join with the Christian knights just as his father had done 35 years earlier against the Albigensians. At the time of the crusade, Joinville placed himself in the service of the king and became his counsellor and confidant. In 1250, when the king and his troops were captured by the Mameluks in al-Mansourah, Joinville, among the captives, participated in the negotiations and the collection of the ransom. Joinville probably brought himself even closer to the king in the difficult times that followed the failure of the crusade. It was Joinville who advised the king to stay in the Holy Land instead of returning immediately to France as the other lords had wanted; the king followed Joinville’s advice. During the following four years spent in the Holy Land Joinville was the constant advisor to the king, who knew that he could count on Joinville’s frankness and absolute devotion. In 1270, Louis IX, although very weakened physically, undertook a new crusade with his three sons. Any enthusiasm Joinville had for the previous crusade had been knocked out of him, and he refused to follow Louis, recognizing the uselessness of the enterprise and convinced that the duty of the king was not to leave the kingdom that needed him. In fact, the expedition was a disaster and the king died outside Tunis on August 25, 1270. From 1271, the papacy carried out a long inquest on the subject of Louis IX, which ended with his canonization, announced in 1297 by Pope Boniface VIII. As Joinville had been a close friend of the king, his counselor and his confidant, his testimony was invaluable to the inquest, where he appeared as a witness in 1282. At the request of Jeanne of Navarre, the queen, he began work on the Histoire de Saint Louis, which he completed in 1309.

“Joinville was a knight. He was neither a cleric skilled in composing books, nor a chronicler informed by researching written or oral information. Nevertheless, his writing is sincere and neutral. He wrote about everything he personally experienced during the reign of Saint Louis, essentially the crusade in Egypt and their stay in the Holy Land. His narrative is full of life, anecdotes and even humor. It is more of a personal testimony about the king than a history of his reign. The freshness and precision of his memories are impressive, especially since he wrote his work some decades after the fact. Certain medievalists explain this by supposing that Joinville had often recounted his past orally or that he had previously committed it to writing before beginning his work. Joinville speaks almost as much about himself as he does about the king, the subject of his book, but he does it in such a natural manner that he never gives the impression that he wants to place himself above the king. Thus we have an incomparable clarity about the ways of thinking of a 13th-century man. For this reason, modern editors have sometimes said the work is more of a memoir than a history or a biography of Saint Louis. The first part of Joinville’s work is dedicated to the holy words of the king. Joinville writes about the edifying words of the king and his Christian virtues. Speeches are very important among Louis’ court. His speech is moral and didactic, reflecting the speech of the preachers who surround him. It transmits a moral and religious teaching and often aims to strengthen the faith of the recipient. An intimacy exists between the king and his followers who express themselves particularly in the conversation: the king invites his audience to respond to his questions, often with the aim of instructing them with moral and religious plans. This importance of the royal speech is particularly well rendered by Joinville, who often has his characters speak. He is one of the first memoirists to integrate reconstructed dialogue into a tale. He most often uses a direct style and marks the interventions of his characters with he said or he did. And Joinville never has his characters speak in long monologues: the lessons are always shown from dialogue.”

"175
Saint Christopher is venerated by several Christian denominations as a martyr killed in the reign of the third-century Roman Emperor Decius (reigned 249-51). His veneration only appears late in Christian tradition, and did not become widespread in the Western Church until the Late Middle Ages. The name Christopher, meaning Christ-bearer, foretells his adult life, which may give a clue that his story lacks a precise historical origin. “Probably in most cases the authors received the spreading tales from others, and believed what they wrote. If we take the Lives of the Saints simply as stories we shall find them full of interest and charm. Consider how St. Christopher got his name. He was a giant of Canaan, eighteen feet tall. He entered the service of a king because he had heard that this was the most powerful man in the world. One day the king crossed himself at mention of the Devil; Christopher concluded that the Devil was more powerful than the king, and thereupon he entered the Devil’s service. But at sight of a cross on the roadside the Devil took flight; and Christopher, reasoning that Jesus must be stronger than Satan, and dedicated himself to Christ. He found it hard to observe the Christian fasts, there was so much of him to feed, and his great tongue tripped over the simplest prayers. A saintly hermit placed him on the bank of a ford whose swift waters annually drowned many who tried to cross it; Christopher took the wayfarers on his back and carried them dry and safe to the other shore. One day he bore a child across the stream; he asked why it was so heavy, and the child replied that it carried the weight of the world; safely across, the child thanked him, said, I am Jesus Christ, and disappeared; and Christopher’s staff, which he had struck in the sand, suddenly blossomed with flowers.”

Jacobs de Voragine (d. 1298), archbishop of Genoa compiled the Golden Legend in 1275 that was published in Latin in 1470 and in English 1483. As a collection of hagiographies, lives of saints with miracle tales of relics, it was the most often printed book in Europe during 1470-1530. Lord comes: “The first was when he came and appeared in human nature and flesh. The second is in the heart and conscience. The third is at death. The fourth is at the Last Judgment.”

“The glory of medieval Latin was its verse. Much of it was poetry in form only, for all varieties of didactic material — history, legend, mathematics, logic, theology, medicine — were given rhythm and rhyme as mnemonic aids.” Walter of Chatillon studied at the University of Paris; during his school years, he wrote a number of Latin poems. He wrote Alexandreis in 1176 that is a Latin epic poem: a version of the Alexander romance that gives an account of the life of Alexander the great. It was popular and influential in Walter’s own times, even being translated into Icelandic prose as the Alesanderssaga. Peter Damian (1007-72) was a reforming Benedictine monk and cardinal in the circle of Pope Leo IX. He was a voluminous writer including treatises, letters, sermons, prayers, hymns and liturgical texts, reflecting the spiritual conditions of Italy. The Damian, poetry was an incident, likening the call of Christ to the call of a lover to a maid: “Who is this that knocks at my door? Would you shatter my night’s dream? He calls me: O loveliest of maidens, Sister, mate, gem most resplendent! Quick! Rise! Open, most sweet!”

Hildebert of Lavardin (1055-1133), born of poor parents in France, became master of the school at Le Mans; in 1091 he was made archdeacon and in 1096 bishop of Le Mans. His writings consist of letters, poems, a few sermons, two lives and one or two treatises. His poems on various subjects were very popular. Thomas of Celano (1200-1365), an Italian friars of the Franciscans, probably wrote Dies Irae (Day of Wrath), a famous Latin hymns, which describes the day of last judgment: “Day of wrath, that day of burning! Earth shall end, to ashes turning; Thus sing saint and seer, discerning.” Jacobone da Todi (1230-1306), an Italian friar of the Franciscans, wrote Stabat Mater (The Mother was Standing), another Latin poem: “At the Cross her station keeping, stood the mournful Mother weeping, close to Jesus to the last. Through her heart, His sorrow sharing, all His bitter anguish bearing, now at length the sword has passed... But he so soon passed by, Had left my door...Weeping I followed after the youth Whose hands formed man.”
Chapter IV. Economic Thought and Other Intellectual Developments

In secular writings, nobles and knights wrote epic poems with vernaculars on the themes of courtly love - troubadour poetry, which was set to music. Jaufre Rudel (d. c. 1147) was a French nobleman, who longed for a distant love: “And he fell in love with the countess of Tripoli, without having seen her, due to all the good things he heard about her from the pilgrims who came from Antioch. And he wrote many songs about her, with beautiful melodies and simple words. And in his desire to see her, he became a crusader, and set to sea and became ill on the ship, and was taken to Tripoli, to an inn, a dying man….The countess became a nun due to the sorrow that his death caused her.” One of his poems “love from afar” writes: “Most sad, most joyous shall I go away, Let me have seen her for a single day, My love afar, I shall not see her, for her land and mine Are sundered, and the ways are hard to find, So many ways, and I shall lose my way, So wills it God.” His poem “the triumph of time” writes: “There lived a singer in France of old, By the tideless dolorous midland sea. In a land of sand and ruin and gold, There shone one woman, and none but she. And finding life for her love’s sake fail, Being fain to see her, he bade set sail, Touched land, and saw her as life grew cold, And praised God, seeing; and so died he.”

Another type of vernacular literature was The Song of Roland written in French appeared around 1100. In the story, Charlemagne had engaged in war against the Saracens in Spain for seven years, when the only stronghold Saragossa was under the Muslim rule. By a plot, his right-hand Roland was dead at the battle where his entire rearguard was destroyed. But Charlemagne finally conquered Saragossa and made them Christians. The Song of the Nibelungs was written by an unknown possibly at the court of the bishop of Passau in around 1200. “It tells the story of dragon-slayer Siegfried from his childhood days and his marriage to Kriemhild to his murder and the subsequent story of Kriemhild’s revenge, finally culminating in the extinction of the Burgundians or Nibelungs at the court of the Huns.” Meanwhile, the courtly romance, a different kind of long poems appeared in the thirteenth century. As one of medieval best sellers, first, the Romance of the Rose is a long French poem of an allegory of courtly love written by two authors; by Guillaume de Lorris around 1230 for the first part, and by Jean de Meun around 1275 for the second part. The courtly romances were not only popular with the nobility but also appealed to both knights and the urban middle class.

In the twelfth and thirteenth century, the three most widely read books in the Western Europe were the Romance of the Rose, the Golden Legend, and Reynard the Fox. The last was “hero of several medieval European cycles of versified animal tales that satirize contemporary human society. “Though Reynard is sly, amoral, cowardly, and self-seeking, he is still a sympathetic hero, whose cunning is a necessity for survival. He symbolizes the triumph of craft over brute strength, usually personified by Isengrim, the greedy and dull-witted wolf.” The Roman de Renart was the greatest of the fabliaux, a fable of animals satirizing man, which is as old as Aesop or older, some came from India through Islam. “Mostly they lampooned women and priests, resenting the natural powers of the one class and the supernatural powers of the other; besides, ladies and priests had condemned the minstrels for reciting scandalous fabliaux.” A fabliau is a comic, often anonymous tale written by jongleuers in northern France between 1150 and 1400. They are generally characterized by sexual and scatological obscenity, by a set of contrary attitudes – contrary to the church and to the nobility. Several of them were reworked by Giovanni Boccaccio for the Decameron and by Geoffrey Chaucer for his Canterbury Tales. Fabliaux are the first expression of literary realism in Europe, though it originally come from the Orient and were brought to the West by returning crusaders. The rise of satire lowered the status of minstrelsy – the traveling singers. They filled the functions, and continued the lineage of men; recited lays, short stories, epics, legends of Mary or the saints, chansons de gest, romans, or fabliaux; and were willing to entertain them with juggling, tumbling, contortions, and rope walking.
Dawn of the Renaissance: (a) Dante Alighieri (1265-1321) was born to a family of burgher in Florence, and learned all the sciences of his time including the teachings of Aquinas. After his military service, Dante entered Florentine politics in 1295 as a member of the guild of physicians and apothecaries, and opposed papal interferences in temporal matters. Becoming one of six Priors of Florence, he was charged with corrupt practices in and out of office in 1302 at the time of his party’s downfall, and he was forced into exile by his enemies with confiscation of his properties. He wandered various towns of northern Italy. Exercising epoch poems during 1300-7, Dante devoted his remaining life to complete the Divine Comedy from 1313 until he died in Ravenna. In the first two stages, Dante invited Vigil as his guide for the journey as a symbol of human reason; but in the beginning of the third stage, Dante invited Beatrice (a true love in his life) as his guide into paradise. “The theology of the Divine Comedy is that of Saint Thomas Aquinas (harmonizing faith and reason); its science is that of Aristotle; and its politics centers on the Holy Roman Emperor as the savor of Italy. At the same time, some observers believe elements of Dante’s work foreshadowed the coming new age of the Renaissance.” The subject of this work is the state of souls after death. “But if the work be taken allegorically its subject is Man, in so far as by merit or demerit…he is exposed to the rewards and punishment of justice…The aim of the whole and the part is to remove those living in this life from a state of misery, and to guide them to a state happiness. The Inferno is man passing through sin, suffering, and despair; the Purgatorio is his cleaning through faith; the Paradiso is his redemption through divine revelation and unselfish love. Vigil, who guides Dante through hell and purgatory, stands for knowledge, reason, wisdom, which can lead us to the portals of happiness; only faith and love can lead us in. In the epic of Dante’s life, his exile was his hell, his studies and his writings were his purgation, his hope and love were his redemption and his only bliss.” In political struggle between Guelphs and Ghibellines in central Italy, Dante was part of the Guelphs, who in general favored the Papacy over the Holy Roman Emperor. Florence's Guelphs split into factions around 1300: the White and the Black Guelphs. Dante was among the White Guelphs who were exiled in 1302. This exile lasted the rest of Dante's life, which influence appears in many parts of the Comedy.

(i) Inferno: The poem begin with that “Midway the path of life that men pursue I found me in a darkling wood astray, for the direct way had been lost to view,” halfway along our life’s path. “Dante is thirty-five years old, half of the biblical lifespan of 70, lost in a dark wood (understood as sin), assailed by beasts he cannot evade, and unable to find the straightway – also translatable as right way – to salvation (symbolized by the sun behind the mountain). Conscious that he is ruining himself and that he is falling into a low place where the sun is silent, Dante is at last rescued by Virgil, and the two of them begin their journey to the underworld. Each sin’s punishment in Inferno is a contrapasso, a symbolic instance of poetic justice; for example, fortune-tellers have to walk with their heads on backwards, unable to see what is ahead, because that was what they had tried to do in life: they had their faces twisted toward their haunches and found it necessary to walk backward, because they could not see ahead of them…and since he wanted so to see ahead, eh looks behind and walks a backward path. Allegorically, the Inferno represents the Christian soul seeing sin for what it really is, and the three beasts represent three types of sin: the self-indulgent, the violent, and the malicious. These three types of sin also provide the three main divisions of Dante’s Hell: Upper Hell…for the four sins of indulgence (lust, gluttony, avarice, anger); Circle 7 for the sins of violence; and Circles 8 and 9 for the sins of malice (fraud and treachery). Added to these are two unlike categories that are specifically spiritual: Limbo, in Circle 1, contains the virtuous pagans who were not sinful but were ignorant of Christ, and Circle 6 contains the heretics who contradicted the doctrine and confused the spirit of Christ. The circles number 9, with the addition of Satan completing the structure of 9 + 1 = 10.”
(ii) Purgatorio: “Having survived the depths of Hell, Dante and Virgil ascend out of the under-gloom to the Mountain of Purgatory on the far side of the world. The Mountain is on an island, the only land in the Southern Hemisphere, created by the displacement of rock which resulted when Satan's fall created Hell (which Dante portrays as existing underneath Jerusalem). The mountain has seven terraces, corresponding to the seven deadly sins or seven roots of sinfulness. The classification of sin here is more psychological than that of the Inferno, being based on motives, rather than actions. It is also drawn primarily from Christian theology, rather than from classical sources. However, Dante's illustrative examples of sin and virtue draw on classical sources as well as on the Bible and on contemporary events. Love, a theme throughout the Divine Comedy, is particularly important for the framing of sin on the Mountain of Purgatory. While the love that flows from God is pure, it can become sinful as it flows through humanity. Humans can sin by using love towards improper or malicious ends (Wrath, Envy, Pride), or using it to proper ends but with love that is either not strong enough (Sloth) or love that is too strong (Lust, Gluttony, Greed). Below the seven purges of the soul is the Ante-Purgatory, containing the Excommunicated from the church and the Late repentant who died, often violently, before receiving rites. Thus the total comes to nine, with the addition of the Garden of Eden at the summit, equaling ten. Allegorically, the Purgatorio represents the Christian life. Christian souls arrive escorted by an angel, singing In exitu Israel de Aegypto. In his Letter to Cangrande, Dante explains that this reference to Israel leaving Egypt refers both to the redemption of Christ and to the conversion of the soul from the sorrow and misery of sin to the state of grace. Appropriately, therefore, it is Easter Sunday when Dante and Virgil arrive. The Purgatorio is notable for demonstrating the medieval knowledge of a spherical Earth. During the poem, Dante discusses the different stars visible in the southern hemisphere, the altered position of the sun, and the various time zones of the Earth.” It is sunset at Jerusalem and sunrise in Purgatory.196

(iii) Paradiso: “After an initial ascension, Beatrice guides Dante through the nine celestial spheres of Heaven. These are concentric and spherical, as in Aristotelian and Ptolemaic cosmology. While the structures of the Inferno and Purgatorio were based on different classifications of sin, the structure of the Paradiso is based on the four cardinal virtues and the three theological virtues. The first seven spheres of Heaven deal solely with the cardinal virtues of Prudence, Fortitude, Justice and Temperance. The first three describe a deficiency of one of the cardinal virtues — the Moon, containing the inconstant, whose vows to God waned as the moon and thus lacked fortitude; Mercury, containing the ambitious, who were virtuous for glory and thus lacked justice; and Venus, containing the lovers, whose love was directed towards another than God and thus lacked Temperance. The final four incidentally are positive examples of the cardinal virtues, all led on by the Sun, containing the prudent, whose wisdom lighted the way for the other virtues, to which the others are bound. Mars contains the men of fortitude who died in the cause of Christianity; Jupiter contains the kings of Justice; and Saturn contains the temperate, the monks who abided by the contemplative lifestyle. The seven subdivided into three are raised further by two more categories: the eighth sphere of the fixed stars that contain those who achieved the theological virtues of faith, hope and love, and represent the Church Triumphant — the total perfection of humanity, cleansed of all the sins and carrying all the virtues of heaven; and the ninth circle, or Primum Mobile, which contains the angels, creatures never poisoned by original sin. Topping them all is the Empyrean, which contains the essence of God, completing the 9-fold division to 10. Dante meets and converses with several great saints of the Church... The Paradiso is consequently more theological in nature than the Inferno and the Purgatorio. However, Dante admits that the vision of heaven he receives is merely the one his human eyes permit him to see, and thus the vision of heaven found in the Cantos is Dante's personal vision.”197
Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-6-3. Petrarch’s Virgil (title page) (c. 1336)
Illuminated manuscript by Simone Martini, 29 x 20 cm Biblioteca Ambrosiana, Milan

Photo IV-6-4. Dante’s Divine Comedy in the Late Middle Ages
Accessed 15 October 2015
https://ka-perseus-images.s3.amazonaws.com/2bf68a41eaeac45d3a31838d3daa26188b7a675.jpg
Dante wrote the *On Monarchy* during 1312-3 that was burned as heretical in 1329, but was rehabilitated by 1921. The poet intervened in one of the most controversial subjects of his period: the relationship between secular and religious authorities or between the Holy Roman Emperor and the Pope. It deals with three questions in three books. Book I inquires whether the office of monarch is necessary for the well-being of the world. The purpose of human society as a whole is to realize human intellectual potential, *simul* (all at once) and *semper* (all the time). The means necessary to achieve this goal is universal peace, for only peace enables human beings to realize their potential fully and continuously. There are three main points of inquiry concerning temporal monarchy. The first argument was in its final ends or goals: is the temporal monarchy necessary for the well-being of the world? Dante responds that the well-being of the world requires that there be a monarchy or empire maintaining peace. The second argument was in the functions of the monarchy as a peace keeper and a lawgiver, resolving the conflict. The monarchy should be neither a means to personal aggrandizement, nor an end in itself, but a means to ensure their fellow human beings can achieve self-fulfillment individually and collectively. The final argument was in unity: the collective will of humanity requires a single guide and this need can only be met in the person of a world-ruler. In arguments, Dante sees Aristotle through a Christian filter.

Book II inquires whether the Roman people took on the office of empire rightfully. Dante argues about Roman nobility, miracles, and their civic selflessness. (i) The Romans deserved their world dominion because of their nobility, their inherent superiority as a race. (ii) Moreover whatever is brought to full realization with the aid of miracles is willed by God, and consequently comes about by right...a miracle is something done by divine intervention outside the normal order in our created world.” (iii) “If therefore our definition correctly embraces both the essence and the purpose of right, and if the goal of any society is the common good of its members, it necessarily follows that the purpose of every right is the common good; and it is impossible that there can be a right which does not aim at the common good.”199 (iv) “Humanity must fulfill its goal if nature is to fulfill her broader purpose...Natures purpose requires a multiplicity of people and nations, and this in turn means there must be a ruling nation. Certain nations are born fitted to rule, others to be subservient. Nature herself fitted the Romans to rule.” (v) Completing his survey of Roman history, Dante had evoked the great episodes and the great figures, in an allusive rather than a discursive way, his account built around poetic testimony which conveys with extraordinary power the sense of destiny, mission and greatness of the Roman Empire.”200

Book III inquires whether the authority of the monarch derives directly from God or from someone else, which was the central political issue of his age. Dante considers and rebuts six arguments for the primacy of papal authority and the dependence of the imperial office on the pope: six arguments based on the scriptures; two based on historical actions of emperors and popes; and a final argument from reason. “Dante’s task will be to show that if the emperor were subject to the pope’s authority, this would be in conflict with nature’s intention and hence with God’s will...Three classes of people oppose the truth Dante wishes to show: the pope and other prelates, whose motivation is their jealous concern for the church and who are honest if misguided; a second group, motivated by greed, who claim to be sons of the church yet deny first principles, and with whom discussion would be futile; and a third group, the decretalists, who regard the decretals as he only authoritative source of enlightenment on this question.” Dante was negative to the so-called “donation of Constantine” since Constantine was not in the position to give away imperial territory; Charlemagne’s coronation by the pope was for his protection of church; and to the papal apologists, it confuses accident with substance: Pope and emperor are what they are by virtue of their relationships to other people. Dante’s last chapter offers a final positive proof that the emperor’s authority comes to him directly from God and not from an intermediary.201
Chapter IV. Economic Thought and Other Intellectual Developments

(b) Petrarch (1304-74) was born in the Tuscan city of Arezzo. Dante was a friend of his father. “Petrarch spent his early childhood in the village of Incisa, near Florence. He spent much of his early life at Avignon and nearby Carpentras, where his family moved to follow Pope Clement V who moved there in 1309 to begin the Avignon Papacy. He studied law at the University of Montpellier (1316–20) and Bologna (1320–23) with a lifelong friend and schoolmate called Guido Sette. Because his father was in the profession of law he insisted that Petrarch and his brother study law also. Petrarch however was primarily interested in writing and Latin literature and considered these seven years wasted. Additionally he proclaimed that through legal manipulation his guardians robbed him of his small property inheritance in Florence, which only reinforced his dislike for the legal system. He protested, ‘I couldn't face making a merchandise of my mind’, as he viewed the legal system as the art of selling justice. Petrarch was a prolific letter writer and counted Boccaccio among his notable friends to whom he wrote often. After the death of their parents, Petrarch and his brother Gherardo went back to Avignon in 1326, where he worked in numerous clerical offices. This work gave him much time to devote to his writing. With his first large scale work, Africa, an epic in Latin about the great Roman general Scipio Africanus, Petrarch emerged as a European celebrity. On April 8, 1341, he became the first poet laureate since antiquity and was crowned by Roman Senatori Giordano Orsini and Orso dell'Anguillara on the holy grounds of Rome’s Capitol. He traveled widely in Europe and served as an ambassador and has been called the first tourist because he traveled just for pleasure, which was the basic reason he climbed Mont Ventoux. During his travels, he collected crumbling Latin manuscripts and was a prime mover in the recovery of knowledge from writers of Rome and Greece. He encouraged and advised Leontius Pilatus's translation of Homer from a manuscript purchased by Boccaccio, although he was severely critical of the result.”

Disdaining the ignorance of the centuries preceding the era in which he lived, Petrarch conceived the idea of Dark Ages.

“Petrarch is best known for his Italian poetry, notably the Canzoniere (Songbook) and the Trionfi (Triumphs). However, Petrarch was an enthusiastic Latin scholar and did most of his writing in this language. His Latin writings include scholarly works, introspective essays, letters, and more poetry. Among them are Secretum (My Secret Book), an intensely personal, guilt-ridden imaginary dialogue with Augustine of Hippo; De Viris Illustribus (On Famous Men), a series of moral biographies; Rerum Memorandarum Libri, an incomplete treatise on the cardinal virtues; De Otto Religiosorum (On Religious Leisure) and De Vita Solitaria (On the Solitary Life), which praise the contemplative life; De Remediis Utriusque Fortunae (Remedies for Fortune Fair and Foul), a self-help book which remained popular for hundreds of years; Itinerarium (Petrarch's Guide to the Holy Land); invectives against opponents such as doctors, scholastics, and the French; the Carmen Bucolicum, a collection of 12 pastoral poems; and the unfinished epic Africa. Petrarch also published many volumes of his letters, including a few written to his long-dead friends from history such as Cicero and Virgil. Cicero, Virgil, and Seneca were his literary models. Most of his Latin writings are difficult to find today, but several of his works are available in English translations. Several of his Latin works are scheduled to appear in the Harvard University Press series I Tatti. It is difficult to assign any precise dates to his writings because he tended to revise them throughout his life. Petrarch collected his letters into two major sets of books called Epistolae familiares (Letters on Familiar Matters) and Seniles (Letters of Old Age), both of which are available in English translation. The plan for his letters was suggested to him by knowledge of Cicero’s letters. These were published without names to protect the recipients, all of whom had close relationships to Petrarch. While Petrarch's poetry was set to music frequently after his death… only one musical setting composed during Petrarch's lifetime survives. This is Non al suo amante by Jacopo da Bologna, written around 1350.”
Chapter IV. Economic Thought and Other Intellectual Developments

Like Beatrice for Dante, Laura was a real woman whom Petrarch had loved in his life. “On April 6, 1327, after Petrarch gave up his vocation as a priest, the sight of a woman called Laura in the church of Sainte-Claire d’Avignon awoke in him a lasting passion, celebrated in the Rime sparse ("Scattered rhymes"). Later, Renaissance poets who copied Petrarch’s style named this collection of 366 poems Il Canzoniere (Song Book). Laura may have been Laura de Noves, the wife of Count Hugues de Sade. There is little definite information in Petrarch’s work concerning Laura, except that she is lovely to look at, fair-haired, with a modest, dignified bearing. Laura and Petrarch had little or no personal contact. According to his Secretum, she refused him for the very proper reason that she was already married to another man. He channeled his feelings into love poems that were exclamatory rather than persuasive, and wrote prose that showed his contempt for men who pursue women. Upon her death in 1348, the poet found that his grief was as difficult to live with as was his former despair. Later in his Letter to Posterity, Petrarch wrote: In my younger days I struggled constantly with an overwhelming but pure love affair – my only one, and I would have struggled with it longer had not premature death, bitter but salutary for me, extinguished the cooling flames. I certainly wish I could say that I have always been entirely free from desires of the flesh, but I would be lying if I did.” In his love song 74, “I am already worn with thinking how my thoughts about you are unwearied, and how, still, I do not leave my life behind by fleeing such a grievous load of sighs; with how in telling of your face, your hair of your fine eyes, on which I ever dwell, my tongue has never left off, nor my voice, calling your name aloud by day and night; and thinking how my feet aren’t weakened, work by following your footsteps everywhere, and squandering fruitlessly so many steps; with thinking whence the ink and paper come that I fill up with you; if I offend in this, blame love, not any flaw in art.” In his lyric poems, Petrarch expresses his love with her: “Those lovely eyes so beautiful have wounded me, so only they can close the wound, and not Herb’s potency nor witch’s charm, indeed.”

“After discovering the private letters of Cicero in the cathedral library in Verona in 1345, Petrarch came to recognize in the Roman statesman and philosopher a man like himself, subject to error and human frailties, rather than the timeless authority whose works earlier thinkers mined for the bits of truth that might be found in them. He wanted to communicate with this Cicero across the intervening centuries, bemoaning the gulf - the Dark Age - that separated the two of them. In acknowledging that the ancients were humans who lived in a particular time and place separated from his own, Petrarch reasoned that to understand them fully, one had to study all their works in their entirety, in the original languages; taking statements out of context and reading works in translation introduced distortions that prevented the original authors from making themselves heard across that gap. He saw their works as offering a way forward out of the disorder that characterized his time. Cicero had argued that rhetoric should be studied with ethics so that eloquence might promote virtue by moving the will of the hearer; for Petrarch, this combination was essential, since the problems of the day required learned men to take action rather than to isolate themselves to ponder eternal truths. Petrarch wrote On His Own Ignorance and that of many others in 1367. His pride had been stung by the patronizing comments of four second-rate scholastics who had criticized him for his failure to show proper reverence for Aristotle. In this, his response to their charges, he illustrated a number of these important differences between the humanist and the scholastic approaches to the works of the ancients.” The main trust of On His Own Ignorance is to bring to a focus his long confrontation with newly emerging philosophical fashions and to record his sense of the logical and moral inconsistencies in these new trends. “In effect, inconsistency is for Petrarch the distinctive mark of the new philosophy, and he captures other damning instances of it in the young men’s conduct in order to subtly intimate that what these dialecticians lack is exactly what they claim to uphold: a logical sense.”
(c) **Giovanni Boccaccio** (1313-75) was the illegitimate child of a French mother and an Italian father, a banker and merchant of Florence. Marrying an Italian girl, his father brought Giovanni back to Florence, and sent him to Naples to learn business. Being not interested in business, he continued his studies at the university in the city: six years for canon law and more for science and literature. “His father introduced him to the Neapolitan nobility and the French-influenced court of Robert the Wise (the king of Naples) in the 1330s. At this time (at his age of twenty-three) he fell in love with a married daughter of the king, who is portrayed as Fiammetta in many of Boccaccio’s prose romances, including *Il Filocolo* (1338). Boccaccio became a friend of fellow Florentine Niccolò Acciaioli, and benefited from his influence as the administrator, and perhaps the lover, of Catherine of Valois-Courtenay, widow of Philip I of Taranto. Acciaioli later became counselor to Queen Joan I of Naples and, eventually, her Grand Seneschal. It seems Boccaccio enjoyed law no more than banking, but his studies allowed him the opportunity to study widely and make good contacts with fellow scholars.” However, it became a disaster when his father’s failure in business made him return to Florence. By then he began to write poems, part of which Chaucer translated into English. “From 1347, Boccaccio spent much time in Ravenna, seeking new patronage, and despite his claims, it is not certain whether he was present in plague-ravaged Florence. His stepmother died during the epidemic and his father, as Minister of Supply in the city, was closely associated with the government efforts. His father died in 1349 and as head of the family, Boccaccio was forced into a more active role. Boccaccio began work on *The Decameron* around 1349. It is probable that the structures of many of the tales date from earlier in his career, but the choice of a hundred tales and the frame-story…of three men and seven women dates from this time. The work was largely complete by 1352. It was Boccaccio's final effort in literature and one of his last works in Italian; the only other substantial work was *Corbaccio* (either 1355 or 1365). Boccaccio revised and rewrote the *Decameron* in 1370–1371.”

As the plague hit the towns, parents fled away from their own children, as if they had no way belonging to them, “finding no charity among their friends, except a very few, and subject to avarice of servants.” A few years after the Black Death, Giovanni began to write *The Decameron* and completed with one hundred tales (ten tales a day for ten days) narrated by seven ladies and three young men who had taken refuge in palaces outside Florence. It contains numerous love stories and affairs with happy or unhappy endings. “For the First Day and the Ninth Day the novels treat of any subject the young narrator’s desire, but otherwise a single board theme is more or less adhered to for each day. In the second series the protagonists attain an unhoped-for happy end. The ten stories told on the Third Day are of whose wits enable them to obtain something for which they greatly yearned. On the Fourth Day, we hear love stories with unhappy ending; on the Fifth, happiness comes to lovers after they have suffered grief or misfortune. Sharp retorts of shrewd actions bring safety or relief to the characters in the novels of the Sixth Day. The subject of the Seventh Day is tricks played by wives on their husbands; on the Eighth Day the tales are of tricks played by men on women, women on men, or men on men. In the final group we learn of men and women who have acted magnanimously in love affairs or other matters. In his conclusion, Boccaccio ably defends himself against charges of lewdness and of making his virtuous ladies say and listen to words not fit for their ears. As for those people who find The Decameron too full of jests and jokes, he advises them to read instead the lamentations of Jeremiah.” After the completion of his masterpiece, Boccaccio wrote little of importance by devoted himself to scholarship, especially the study of Dante. He wrote the first biography of Dante, and became friendly with the next great Italian poet Petrarch. “His last years were lonely, gloomy, and impoverished until his friends established a chair of Dante studies for him. He delivered the first lecture toward the end of 1373, but became quite ill, and died two years later.”

---

*Book II The Middle Ages from 750 to 1400*
Chapter IV. Economic Thought and Other Intellectual Developments

Photo IV-6-5. A Tale from the Decameron

In the first novel of the first day, a religious man named Chappelet made a false confession by misleading and died soon. “Holy Father, I always used to be confessed once every week, albeit sometimes much more often; but true it is, the being fallen into this sickness, now eight days since I have not been confess, so violent has been the extremity of weakness. My son you has done well, and so keep you still hereafter in that mind: but I plainly perceive, seeing you has so often confessed yourself, that I shall take the less labor in urging questions to you…he began to demand of him if he had never offended with any women?...Holy Father, I am half ashamed to tell you the truth in this case, as fearing least I should sin in vain-glory…Father, seeing you give me so good an assurance, I will resolve you faithfully herein I am so true a virgin-man in this matter, even as when I issued forth of my mother’s womb. O son how happy and blessed of God are you?”

When the religious man perceived, that nothing more was to be confessed by Chappelet; he gave him absolution, and his own benediction. He died soon but was refuted to be a saint by a vulgar judgment because he lived lewdly and wickedly, which was unconfessed.

In the second novel of the fourth day, Friar Albert made a young Venetian gentlewoman believe that a God was fallen in love with her; and the friar restored of ten times into her in the disguise of the same God. As women’s kindred and friends became to know the happening, Albert was so frightened that escaped from her room and hided himself in a poor man’s house. In the following day, Albert appeared to St. Mark in a shape of a wild and savage man, while the brethren of his order became to know the fact, so that he was imprisoned. In the tenth novel of the fifth day, Pedro went to supper at a friends’ house in the city, while his wife had supper with a young man whom she loved. Pedro broke off the planned supper and suddenly returned to his home. He found a young man and the fallacy of his wife, with whom he gained an agreement in favor of some imperfection of himself. “When Pedro perceived, that his wife had spoken nothing but reason, in regard of his over-much neglect towards her, and not using such household kindness, as ought to be between man and wife. Well wife, I confess my fault, and hereafter will labor to amend it. Since then Pedro became always more loving to his wife.”

Book II The Middle Ages from 750 to 1400
(d) **Geoffrey Chaucer** (1342-1400) was born to a family of London vintners who held official posts in the wine customs office. He went to a war in France where he was caught, but released with ransom. He presumably studied law in London, reentered the royal service, and became one of the king’s esquires by 1368. A sister of his wife became the second wife of the prince John of Gaunt, who supported Chaucer’s writings. “In 1386 Chaucer became Controller of Customs and Justice of peace and then three years later in 1389 Clerk of the King's work. It was during these years that Chaucer began working on his most famous text, The Canterbury Tales.” He spent next seven years to end this book. The tales are presented as part of a story-telling contest by a group of pilgrims as they travel together on a journey from London to Canterbury in order to visit the shrine of Saint Thomas Becket at Canterbury Cathedral. The prize for this contest is a free meal at the Tabard Inn at Southwark on their return. After a long list of works written earlier in his career, including *Troilus and Criseyde*, *House of Fame*, and *Parliament of Fowls*, The Canterbury Tales is near-unanimously seen as Chaucer’s magnum opus. He uses the tales and the descriptions of its characters to paint an ironic and critical portrait of English society at the time, and particularly of the Church. Chaucer’s use of such a wide range of classes and types of people was without precedent in English. Although the characters are fictional, they still offer a variety of insights into the customs and practices of the time. Often, such insight leads to a variety of discussions and disagreements to people in the 14th century. For example, although a variety of social classes are represented in these stories and all pilgrims on a spiritual quest, it is apparent that they are more concerned with worldly things than spiritual. Structurally, the collection resembles *The Decameron*, which Chaucer may have read during his first diplomatic mission to Italy in 1372. The Canterbury Tales were far from complete at the end of his poems. Since Chaucer was a courtier, the audience of the Tales is more difficult to determine.

The Canterbury Tales is narrated by a group of thirty-one pilgrims, which portrays an entire range of English society both high and low born. Frank E. Hill commented as follows: “In this freshness and vitality of revelation, Chaucer is the most modern of poets, and seems destined always to be modern – that it to say, universal. Yet there is a particular kinship between him and the twenties century reader. Like us, Chaucer lived in a world of change: religion, trade and social custom were in drastic process of alteration. Even his language was being reborn. It was an age demanding objectivity, and awareness of actual happening, a shrewd sense of selection. Chaucer brought such qualities to work. In a modern phrase, he was a good (realistic fact-finding) reporter: in the largest sense he could detect news. He was able to look dispassionately at the complicated and exciting picture of his age. So we get through him a realist’s view of the medieval world, and find it a world much like our own. Yet we are brought into it, and learn through Chaucer its own peculiar beauty, its loyalties, and the quality of its spiritual faith.” The Canterbury Tales was written during a turbulent time in English history. “The Catholic Church was in the midst of the Western Schism and, though it was still the only Christian authority in Europe, was the subject of heavy controversy. Lollardy, an early English religious movement led by John Wycliffe, is mentioned in the Tales, as is a specific incident involving pardoners (who gathered money in exchange for absolution from sin) who nefariously claimed to be collecting for St. Mary Rouncesval hospital in England...Political clashes, such as the 1381 Peasants’ Revolt and clashes ending in the deposing of King Richard II, further reveal the complex turmoil surrounding Chaucer in the time of the Tales’ writing. Many of his close friends were executed and he himself was forced to move to Kent to get away from events in London.” Chaucer criticized the corruption of the church and pursued all of humanity through entire stories by sharply observing social reality. His “bawdiness” has been “a mildly contentious topic, popular among readers who like to be daring, or who enjoy the spicy; and embarrassing to some teachers and librarians.”
“The Tales reflect diverse views of the Church in Chaucer's England. After the Black Death, many Europeans began to question the authority of the established Church. Some turned to lollardy, while others chose less extreme paths, starting new monastic orders or smaller movements exposing church corruption in the behavior of the clergy, false church relics or abuse of indulgences. Several characters in the Tales are religious figures, and the very setting of the pilgrimage to Canterbury is religious, making religion a significant theme of the work. Two characters, the Pardoner and the Summoner, whose roles apply the church's secular power, are both portrayed as deeply corrupt, greedy, and abusive. A pardoner in Chaucer's day was a person from whom one bought Church indulgences for forgiveness of sins, but pardoners were often thought guilty of abusing their office for their own gain. Chaucer's Pardoner openly admits the corruption of his practice while hawking his wares. The Summoner is a Church officer who brought sinners to the church court for possible excommunication and other penalties. Corrupt summoners would write false citations and frighten people into bribing them to protect their interests. Chaucer's Summoner is portrayed as guilty of the very kinds of sins he is threatening to bring others to court for, and is hinted as having a corrupt relationship with the Pardoner. In The Friar's Tale, one of the characters is a summoner who is shown to be working on the side of the devil, not God. Churchmen of various kinds are represented by the Monk, the Prioress, the Nun's Priest, and the Second Nun. Monastic orders, which originated from a desire to follow an ascetic lifestyle separated from the world, had by Chaucer's time become increasingly entangled in worldly matters. Monasteries frequently controlled huge tracts of land on which they made significant sums of money, while peasants worked in their employ...Pilgrimage was a very prominent feature of medieval society. The ultimate pilgrimage destination was Jerusalem, but within England Canterbury was a popular destination. Pilgrims would journey to cathedrals that preserved relics of saints, believing that such relics held miraculous powers.”
Chapter IV. Economic Thought and Other Intellectual Developments

In Social class and convention, “The upper class or nobility, represented chiefly by the Knight and his Squire, was in Chaucer's time steeped in a culture of chivalry and courtliness. Nobles were expected to be powerful warriors who could be ruthless on the battlefield, yet mannerly in the King's Court and Christian in their actions. Knights were expected to form a strong social bond with the men who fought alongside them, but an even stronger bond with a woman whom they idealised to strengthen their fighting ability. Though the aim of chivalry was to noble action, often its conflicting values degenerated into violence. Church leaders often tried to place restrictions on jousts and tournaments, which at times ended in the death of the loser. The Knight's Tale shows how the brotherly love of two fellow knights turns into a deadly feud at the sight of a woman whom both idealise, with both knights willing to fight the other to the death to win her. Chivalry was in Chaucer's day on the decline, and it is possible that The Knight's Tale was intended to show its flaws, although this is disputed. Chaucer himself had fought in the Hundred Years' War under Edward III, who heavily emphasised chivalry during his reign…The Tales constantly reflect the conflict between classes.”

The concept of liminality figures prominently within the Canterbury Tales…The notion of a pilgrimage is itself a liminal experience, because it centers on travel between destinations and because pilgrims undertake it hoping to become more holy in the process. Thus, the structure of the Canterbury Tales itself is liminal; it not only covers the distance between London and Canterbury, but the majority of the tales refers to places entirely outside the geography of the pilgrimage…Here, the condition of peril is as prominent as that of protection. The act of pilgrimaging itself consists of moving from one urban space, through liminal rural space, to the next urban space with an ever fluctuating series of events and narratives punctuating those spaces. The goal of pilgrimage may well be a religious or spiritual space…and reflect a psychological progression of the spirit, in yet another kind of emotional space.”

Endnotes

2 Ibid., 2.
3 Ibid., 3.
5 Diana Wood, Medieval Economic Thought, 41.
7 Diana Wood, Medieval Economic Thought, 21.
8 Ibid., 22.
9 Ibid., 25-6.
10 Ibid., 27-9.
11 Ibid., 30-1.
12 Ibid., 32-3.
13 Ibid., 34-6.
14 Ibid., 37-40
15 There appeared popular revolts: uprising and rebellions by peasants in the countryside, or the bourgeoisie in towns, against nobles, abbots and kings during the upheavals of the fourteenth through early sixteenth centuries. In the Central Europe and the Balkan region, these rebellions caused a political and social disunity. The popular resentment and rebellion include the Jacquerie in France in 1358, the revolt of the Ciompi in Florence in 1378, the English Peasants’ Revolt of 1381, and that of the Low Countries in 1382.
16 Ibid., 43-9.
Chapter IV. Economic Thought and Other Intellectual Developments

23 Ibid., 73-4.
27 Diana Wood, Medieval Economic Thought, 92-3.
28 Ibid., 93-4.
29 Ibid., 96-7.
30 Ibid., 107-8.
31 Ibid., 111-5.
32 Ibid., 116-7.
33 Ibid., 117-8.
34 Ibid., 118-9.
37 Ibid., 135-6.
38 Ibid., 143-57.
40 Diana Wood, Medieval Economic Thought, 146.
42 Ibid., 32-56.
43 Ibid., 57-65.
44 Diana Wood, Medieval Economic Thought, 159-61.
45 Sydney Homer, A History of Interest Rates, 63-4.
47 Diana Wood, Medieval Economic Thought, 167-73.
49 Sydney Homer, A History of Interest Rates, 73-81.
50 Ibid., 83-4.
51 Ibid., 85-6.
52 Ibid., 89-90.
53 Ibid., 91-2.
54 Ibid., 93-5.
55 Ibid., 98-9.
Chapter IV. Economic Thought and Other Intellectual Developments

[58] Ibid., 57-61.
[59] Ibid., 61-4.
[60] Ibid., 64-6.
[61] Ibid., 67.
[62] Ibid., 68.
[63] Ibid., 68-9.
[64] Ibid., 69-70.
[66] Ibid., 25-6.
[67] Ibid., 26-7.
[68] Ibid., 27.
[69] Ibid., 28-9.
[70] Ibid., 31-2.
[71] Ibid., 33-4.
[72] Ibid., 38.
[73] Ibid., 43-4.
[74] Ibid., 23.
[77] Ibid., 26-7.
[78] Ibid., 29-31.
[79] Ibid., 51-3.
[81] Ibid., 905-6.
[82] Ibid., 906-7.
[83] Ibid., 908-9.
[84] Ibid., 909-11.
[85] Ibid., 911-2.
[86] Ibid., 912-3.
[87] Ibid., 913-4.
[88] Ibid., 915.
[90] Ibid., 14-9.
[91] Ibid., 21.
[92] Ibid., 23.
[93] Ibid., 26.
[94] Ibid., 35-47.

Book II The Middle Ages from 750 to 1400
Chapter IV. Economic Thought and Other Intellectual Developments

100 Ibid., 49.
103 Hastings Rashdall, The Universities of Europe in the Middle Ages, Volume I, 321-33.
106 Hastings Rashdall, The Universities of Europe in the Middle Ages, Volume III, 238.
107 Ibid., 136.
109 Ibid., 88-106.
111 Ibid., 133.
115 Ibid., 204-5.
116 Ibid., 231-3.
117 Peter Moraw, “Chapter 8. Careers of Graduates,” in A History of the University in Europe, Volume I, 244-79.
125 Ibid., 44.
129 Ibid., 990-1.
130 Ibid., 991.
131 Ibid., 992.
Chapter IV. Economic Thought and Other Intellectual Developments

135 Ibid., 993-4.
136 Ibid., 994.
137 Ibid., 995.
138 Ibid., 996.
140 Ibid., the same.
142 Ibid., the same, accessed 11 October 2015.
146 Ibid., the same.
147 Medieval medicine of Western Europe: Hospital system, accessed 12 October 2015, https://en.wikipedia.org/wiki/Medieval_medicine_of_Western_Europe#Hospital_system.
155 Ibid., the same.
156 Edward Grant, Science and Religion, 400 B.C. to A.D. 1550, 189.
158 Ibid., the same.
166 Ibid., 1019.
168 William of Malmesbury, accessed 13 October 2015,
Chapter IV. Economic Thought and Other Intellectual Developments


170 Otto of Freising, accessed 13 October 2015, https://en.wikipedia.org/wiki/Otto_of_Freising. “It is not confined to German affairs, as the author digresses to tell of the preaching of Bernard of Clairvaux, of his zeal against the heretics, and of the condemnation of Pierre Abélard; and discourses on philosophy and theology. The second book opens with the election of Frederick I in 1152, and deals with the history of the first five years of his reign, especially in Italy, in some detail. From this point (1156) the work is continued by Ragewin. Otto’s Latin is excellent.”


174 Ibid., the same.


196 Dante, Monarchy (Cambridge, UK: Cambridge University Press, 2006), 3-29.

197 Ibid., 40.

198 Ibid., xxi

199 Ibid., 93.


Chapter IV. Economic Thought and Other Intellectual Developments

210 Ibid., 19.
211 Ibid., 190.
212 Ibid., 227-8.

Photo IV-6-7. Hippodrome of Constantinople

636 Book II The Middle Ages from 750 to 1400