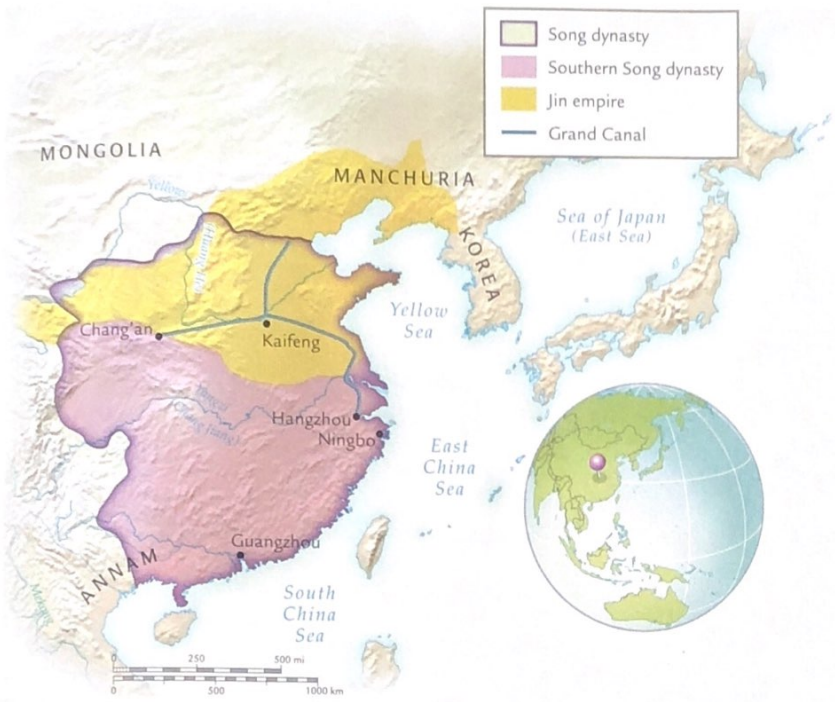

MAP 13.2
The Song dynasty, 960–1279 C.E.
After the establishment of the Jin empire, the Song dynasty moved its capital from Kaifeng to Hangzhou.
What advantages did Hangzhou offer to the Song rulers?

Song Weaknesses The Song approach to administration resulted in a more centralized imperial government than earlier Chinese dynasties had enjoyed. But it caused two big problems that weakened the dynasty and eventually brought about its fall. The first problem was financial: the enormous Song bureaucracy devoured China's surplus production. As the number of bureaucrats and the size of their rewards grew, the imperial treasury came under tremendous pressure. Efforts to raise taxes aggravated the peasants, who mounted two major rebellions in the early twelfth century. By that time, however, bureaucrats dominated the Song administration to the point that it was impossible to reform the system.

The second problem was military. Scholar-bureaucrats generally had little military education and little talent for military affairs, yet they led Song armies in the field and made military decisions. It was no coincidence that nomadic peoples flourished along China's northern border throughout the Song dynasty. From the early tenth through the early twelfth century, the Khitan, a seminomadic people from Manchuria, ruled a vast empire stretching from northern Korea to Mongolia. During the first half of the Song dynasty, the Khitan demanded and received large tribute payments of silk and silver from the Song state to the south. In the early twelfth century, the nomadic Jurchen conquered the Khitan, overran northern China, captured the Song capital at Kaifeng, and proclaimed establishment of the Jin empire. Thereafter the Song dynasty moved its capital to the prosperous port city of **Hangzhou** and survived only in southern China, so that the latter part of the dynasty is commonly known as the Southern Song. This truncated Southern Song shared a border with the Jin empire about midway between the Yellow River and the Yangzi River until 1279, when Mongol forces ended the dynasty and incorporated southern China into their empire.

THE ECONOMIC DEVELOPMENT OF TANG AND SONG CHINA

Although the Song dynasty did not develop a particularly strong military capacity, it benefited from a remarkable series of agricultural, technological, industrial, and commercial developments that transformed China into the economic powerhouse of Eurasia. This economic development originated in the Tang dynasty, but its results became most clear during the Song, which presided over a land of enormous prosperity. The economic surge of Tang and Song times had implications that went well beyond China, since it stimulated trade and production throughout much of the eastern hemisphere for more than half a millennium, from about 600 to 1300 C.E.

Agricultural Development

Fast-Ripening Rice The foundation of economic development in Tang and Song China was a surge in agricultural production. Sui and Tang armies prepared the way for increased agricultural productivity when they imposed their control

An illustration commissioned by the Song government shows peasants how to go about the laborious task of transplanting rice seedlings into a paddy flooded with water.

over southern China and ventured into Vietnam. In Vietnam they encountered strains of fast-ripening rice that enabled cultivators to harvest two crops per year. When introduced to the fertile fields of southern China, fast-ripening rice quickly resulted in an expanded supply of food. Like the *dar al-Islam*, Tang and Song China benefited enormously from the introduction of new food crops.

New Agricultural Techniques Chinese cultivators also increased their productivity by adopting improved agricultural techniques. They made increased use of heavy iron plows, and they harnessed oxen (in the north) and water buffaloes (in the south) to help prepare land for cultivation. They enriched the soil with manure and composted organic matter. They also organized extensive irrigation systems. These included not only reservoirs, dikes, dams, and canals but also pumps and waterwheels, powered by both animals and humans, that moved water into irrigation systems. Artificial irrigation made it possible to extend cultivation to difficult terrain, including terraced mountainsides—a development that vastly expanded China's agricultural potential.

Population Growth Increased agricultural production had dramatic results. One was a rapid expansion of the Chinese population. After the fall of the Han dynasty, the population of China reached a low point, about 45 million in 600 C.E. By 800 it had rebounded to 50 million, and two centuries later to 60 million. By 1127, when the Jurchen conquered the northern half of the Song state, the Chinese population had passed 100 million, and by 1200 it stood at about 115 million. This rapid population growth reflected both the productivity of the agricultural economy and the well-organized distribution of food through transportation networks built during Sui and Tang times.

Urbanization Increased food supplies encouraged the growth of cities. During the Tang dynasty the imperial capital of Chang'an was the world's most populous city, with perhaps as many as two million residents. During the Song dynasty, China was the most urbanized land in the world. In the late thirteenth century, Hangzhou, capital of the Southern Song dynasty, had more than one million residents. These cities supported hundreds of restaurants, noodle shops, taverns, teahouses, brothels, music halls, theaters, clubhouses, gardens, markets, craft shops, and specialty stores dealing in silk, gems, porcelain, lacquerware, and other goods. Hangzhou residents, like those in most cities, observed peculiar local customs. Taverns often had several stories, for example, and patrons gravitated to higher or lower stories according to their plans: those desiring only a cup or two of wine sat at street level, whereas those planning an extended evening of revelry sought tables on the higher stories.

As a capital, Hangzhou was something of a special case among cities, but during the Tang and Song eras, scores of Chinese cities boasted populations of one hundred thousand or more. **Li Bai** (701–761 C.E.), who was perhaps the most popular poet of the Tang era, took the social life of these Chinese cities as one of his principal themes. Li Bai mostly wrote light, pleasing verse celebrating life, friendship, and especially wine. (Tradition holds that the drunken poet died by drowning when he fell out of a boat while attempting to embrace the moon's reflection in the water.) The annual spring festival was an occasion dear to the heart of urban residents, who flocked to the streets to shop for new products, have their fortunes told, and eat tasty snacks from food vendors.

The great Tang dynasty poet Li Bai chanting a poem, by Song dynasty artist Liang Kai (1140–1210).

Another result of increased food production was the emergence of a commercialized agricultural economy. Because fast-ripening rice yielded bountiful harvests, many cultivators could purchase inexpensive rice and raise vegetables and fruits for sale on the commercial market. Cultivators specialized in crops that grew well in their regions, and they often exported their harvests to distant regions. By the twelfth century, for example, the wealthy southern province of Fujian imported rice and devoted its land to the production of lychees, oranges, and sugarcane, which fetched high prices in northern markets. Indeed, market-oriented cultivation went so far that authorities tried—with only limited success—to require Fujianese to grow rice so as to avoid excessive dependence on imports.

Patriarchal Social Structures With increasing wealth and agricultural productivity, Tang and especially Song China experienced a tightening of patriarchal social structures, which perhaps reflected a concern to preserve family fortunes through enhanced family solidarity. During the Song dynasty the veneration of family ancestors became much more elaborate. Instead of simply remembering ancestors and invoking their aid in rituals performed at home, descendants diligently sought the graves of their earliest traceable forefathers and then arranged elaborate graveside rituals in their honor. Whole extended families often traveled great distances to attend annual rituals venerating their ancestors—a practice that strengthened the sense of family identity and cohesiveness.

Foot Binding Strengthened patriarchal authority also helps to explain the popularity of foot binding, which spread widely during the Song era. **Foot binding** involved the tight wrapping of young girls' feet with strips of cloth that prevented natural growth of the bones and resulted in tiny, malformed, curved feet. Women with bound feet could not walk easily or naturally. Usually, they needed canes to walk by themselves, and sometimes they depended on servants to carry them around in litters. Foot binding never became universal in China, but many wealthy families and sometimes also peasant families bound the feet of their daughters to enhance their attractiveness and gain increased control over the girls' behavior. Like the practice of veiling women in Mediterranean and Muslim lands, foot binding placed women under tight supervision of their husbands or other male guardians, who then managed the women's affairs in the interests of the larger family.

Wu Zhao: The Lady Emperor Ironically, this era of strong patriarchal authority produced a rare female ruler. **Wu Zhao** (626–706 C.E.), also known as Wu Zetian, was the daughter of a scholar-official. At the age of thirteen, she became a concubine at the court of Tang Taizong, where she attracted notice because of her intelligence, wit, and beauty. After Taizong's death, Wu Zhao became the concubine and later the wife of his successor. In 660 the emperor suffered a debilitating stroke, and Wu Zhao seized the opportunity to direct affairs as administrator of the court. In 690 she went further and claimed the imperial title for herself.

Confucian principles held that political leadership was a man's duty and that women should obey their fathers, husbands, and sons. Thus it was not surprising that factions emerged to oppose Wu Zhao's rule. The lady emperor, however, was resourceful in garnering support. She organized a secret police force to monitor dissident factions, and she ordered brutal punishment for those who stood in her way. She strengthened the civil service system as a way of undercutting aristocratic families that might attempt to displace her. She also generously patronized Buddhists, who returned the favor by composing treatises seeking to legitimize her rule. Although Confucian scholars reviled her, Wu Zhao was an energetic and effective ruler. She quashed rebellions, organized military campaigns, and opened the imperial administration to talented commoners who rose through the civil service system. She held on to her rule until age eighty, when opponents were finally able to force an ailing Wu Zhao to abdicate in favor of her son. Yet the lady emperor was unique as a woman who publicly and officially wielded power in a rigidly patriarchal society. Other women exercised influence indirectly or even "ruled from behind a screen," but Wu Zhao was the only woman in Chinese history to claim the imperial title and rule as emperor.

Technological and Industrial Development

Porcelain Abundant supplies of food enabled many people to pursue technological and industrial interests. During the Tang and Song dynasties, Chinese crafts workers generated a remarkable range of technological innovations. During Tang times they discovered techniques of producing high-quality **porcelain,** which was lighter, thinner, and adaptable to more uses than earlier pottery. When fired with glazes, porcelain could also become an aesthetically appealing utensil and even a work of art. Porcelain technology gradually diffused to other societies, and Abbasid crafts workers in particular produced porcelain in large quantities. Yet demand for Chinese porcelain remained strong, and the Chinese exported vast quantities of porcelain during the Tang and Song dynasties. Archaeologists have turned up Tang and Song porcelain at sites all along the trade networks of the postclassical era: Chinese porcelain graced the tables of wealthy and refined households in southeast Asia, India, Persia, and the port cities of east Africa. Tang and Song products gained such a reputation that fine porcelain has come to be known generally as *chinaware.*

Metallurgy Tang and Song craftsmen also improved metallurgical technologies. Production of iron and steel surged during this era, partly because of techniques that resulted in stronger and more useful metals. Chinese craftsmen discovered that they could use coke instead of coal in their furnaces and produce superior grades of metal. Between the early ninth and the early twelfth centuries, iron production increased almost tenfold according to official records, which understate total production. Most of the increased supply of iron and steel went into weaponry and agricultural tools: during the early Song dynasty, imperial armaments manufacturers produced 16.5 million iron arrowheads per year. Iron and steel also went into construction projects involving large structures such as bridges and pagodas. As in the case of porcelain technology, metallurgical techniques soon diffused to other lands beyond China. Indeed, Song military difficulties stemmed partly from the fact that nomadic peoples quickly learned Chinese techniques and fashioned their own iron weapons for use in campaigns against China.

Gunpowder Quite apart from improving existing technologies, Tang and Song craftsmen invented entirely new products, tools, and techniques, most notably **gunpowder,** printing, and naval technologies. Daoist alchemists discovered how to make gunpowder during the Tang dynasty, as they tested the properties of various experimental concoctions while seeking elixirs to prolong life. They soon learned that it was unwise to mix charcoal, saltpeter, sulphur, and arsenic, because the volatile compound often resulted in singed beards and even destroyed buildings. Military officials, however, recognized opportunity in the explosive mixture. By the mid-tenth century, they were using gunpowder in bamboo "fire lances," a kind of flamethrower, and by the eleventh century they had fashioned primitive bombs.

The earliest gunpowder weapons had limited military effectiveness: they probably caused more confusion because of noise and smoke than damage because of their destructive potential. Over time, however, refinements enhanced their effectiveness. Knowledge of gunpowder chemistry quickly diffused through Eurasia, and by the late thirteenth century peoples of southwest Asia and Europe were experimenting with metal-barreled cannons.

Printing The precise origins of printing lie obscured in the mists of time. Although some form of printing may have predated the Sui dynasty, only during the Tang era did printing become

A printed book from the twelfth century presents a Chinese translation of a Buddhist text along with a block-printed illustration of the Buddha addressing his followers.