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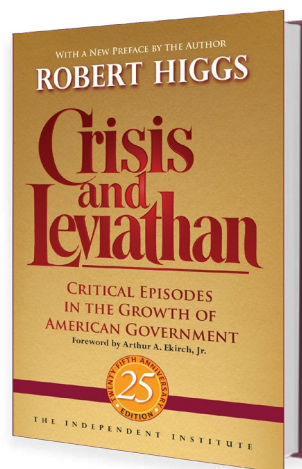
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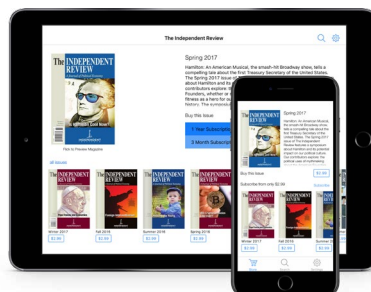
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# How Paper Money Led to the Mongol Conquest

## *Money and the Collapse of Song China*

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PETER ST. ONGE

The first panacea for a mismanaged nation is inflation of the currency; the second is war. Both bring a temporary prosperity; both bring a permanent ruin. But both are the refuge of political and economic opportunists.

—Ernest Hemingway, “Notes on the Next War”

China’s Song dynasty (960–1279) is fascinating for three reasons. First, the Song is one of history’s wealthiest Golden Ages, inventing military gunpowder, movable print, industrial textiles, windmills, and canal-faring paddleboats—innovations fueled by the mass production and commercialization of rice. Second, as a powerful empire succumbing to the Mongols, the Song added to the resources the Mongols subsequently deployed to conquer most of Eurasia. Third, among the most significant inventions credited to the era is one many of us carry every day: paper money.

The Song is also fascinating because of its fate: it collapsed not once, but twice. Both collapses occurred in a strikingly similar pattern: propagation of populist and dirigiste

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policies that burdened the private sector, followed closely by inflationary deficit financing, hyperinflation, war in alliance with inferior neighbors, and, finally, conquest by these seemingly far less powerful allies. That such a similar pattern occurred twice, on such similar timelines, begs a search for underlying economic patterns.

Generalissimo Chiang Kai-Shek once compared the invading Japanese to a disease of the skin but the Communists to a disease of the heart (Hu 2006). In this essay, I argue that China's Song dynasty was destroyed not by the skin disease of military misadventure but rather by the heart disease of an economically predatory government. I trace out the critical role played by one of the most significant technological developments of the era: fiat currency.

I argue that because inflationary deficit finance allowed the Song to obtain revenue regardless of the private sector's well-being, in a process analogous to the natural-resource curse (Garaibeh 1987; Luciani 1987; Chaudhry 1994; Karl 1997; Ascher 1999; Moore 2001, 2004; Sachs and Warner 2001) and to the "aid curse" (Leeson 2008), these policies weakened the natural symbiosis between public administration and the private sector. In effect, by papering over the short-term fiscal harm of economically destructive policies, fiat money creation allowed those policies to survive long enough to "metastasize." This greater freedom of bureaucratic action allowed the entrenchment of policies that harassed the private economy via attacks on the property rights on which it depended (see Acemoglu, Johnson, Robinson 2001, 1369, for a survey of literature linking security of property rights and economic growth), while permitting increased fiscal costs that became debilitating during episodes of monetary retrenchment.

This fiat-money-enabled economic stagnation and fiscal deadweight then led to the proximate causes of the Song's decline: high inflation, widespread corruption, a series of aggressive wars with neighbors, and alienation of local landlords, merchants, and producers. Combined, these results facilitated what would otherwise have been an unlikely conquest by much smaller neighbors.

Explanations of the Song collapses today tend to focus on noneconomic and typically proximate causes: military reversals (Woolf 2008), gradual resource depletion (Pomeranz 2000), overpopulation (Sng 2010), and even cultural aggregates such as general attitudes toward innovation (Mokyr 1990; Landes 2006). A key challenge to such arguments, beyond the military mismatch, is that both declines saw sharp inflections surrounding economic policy events, identifiable to the decade or even the year—too sharp for population pressures, gradual resource depletion, or especially cultural views of innovation. Kent Deng sums up the modern view: "The Song paradox of advanced industry and commerce coinciding with pathetic national defense has never failed to provoke debate" (2013, 4).

Indeed, the military, production, and economic policy evidence points to two very specific inflection points in the collapses. Both occurred several decades before the actual conquests, and both hinge on the promotion of a package of populist and dirigiste policies formulated by Prime Minister Wang Anshi (in office 1069–76), who even today is revered

as a major intellectual influence on Chinese political philosophy. The first inflection began a few short years after Wang's rise to power in 1069, and the second occurred several years after the installation of the inflationist emperor Xiaozong in 1162.

With this essay, I hope to shift scholarly emphasis from the proximate symptoms of the two Song collapses toward the underlying problems of the Song economy, problems that in turn crippled the Song administration. This shift in emphasis matters for two reasons. First, rather than focusing on particular decisions or personalities—whether General X chose the right terrain in battle Y or what money-token was printed in Sichuan in 1107—it places blame squarely on the fundamental economic dynamics. This shift is also important because it suggests a greater generalizability of the warnings we should take from the collapse of the Song. If the Song collapses were random mistakes, we can draw few lessons beyond “Don't use General X to fight Mongols in terrain Y.” If, however, the Song collapses illustrate a fundamental process whereby the ability to grow the money supply permits economically destructive polices to metastasize, then we might pay more attention to similar processes unfolding now.

Indeed, since the collapse of the Bretton Woods arrangement in 1973, all of the world's major economies have begun down the Song path: fiat-currency regimes have enabled institutionalized deficit financing and permanent inflation and have indeed been accompanied by rising regulatory burdens, rising rates of taxation, and slowing rates of economic growth, today termed “secular stagnation” (Baldwin and Teulings 2014). We have even seen in the case of the United States a return to the Wang-style “ever war” as an assembly line of “preemptive” military interventions grinds on.

## Overview of the Song Dynasty

The Song (Sung) dynasty was established in 960 and ended with the death of its last emperor, Huaizong, in 1279. Song China has a strong claim to be the first industrialized society in history (Miyakawa 1955; Sng 2010), with modern legal, regulatory, tax, and money institutions. The first century of the dynasty saw very strong economic growth; output of iron rose fivefold, while output of bronze, tin, and lead rose twenty- to fiftyfold, velocities of output growth rare before the Industrial Revolution (Du 1998). The arts and living standards dramatically improved (Maddison 1998, 19–39); population doubled in a century (Smil 1993); and a thriving consumer society flourished (Miyakawa 1955). In a strikingly modern-sounding complaint, one contemporary observer complained that young people couldn't cook anymore because everybody was buying takeout (Gernet 1962).

What should unsettle the historian is that despite this unprecedented economic strength and the technological advances that accompanied this strength—gunpowder (including exploding iron shells), movable type, textile machinery, new seed varieties, paddle-wheel ships, modern windmills—the dynasty was ultimately conquered twice by bands of nomads with a fifty-to-one disadvantage in numbers. Many historians have focused on military factors, but an analogy might help to retrain that focus: if the

nineteenth-century United States had been seized and ruled by, say, the Sioux, we might look less to Sitting Bull's horseback skills or to General Custer's order of battle and more to institutional reasons why the governing regime had become so brittle that it was easily broken.

## Song Timelines

The fortunes of the Song dynasty followed an M-shaped pattern, with a century separating two dramatic rises and a dramatic collapse after each rise. Three distinct timelines are considered here: military, productivity, and monetary. Interactions among the three can then be discussed in the context of the observed Song inflection points.

### *Military Timeline*

The Song dynasty was established by unifying several small kingdoms that had emerged after a military coup deposed the previous Tang dynasty. Patricia Buckley Ebrey describes the fifty-year interim between dynasties as prosperous; the Tang-era property institutions were preserved, and the small kingdoms coexisted largely peacefully, with the population rising during both the Tang and interim periods. Ebrey writes, “[P]olitical fragmentation in the south did not impair the economy there; on the contrary rulers of the regional states, eager to expand their tax bases successfully promoted trade” (1996, 136). The principle Tang economic innovation had been abandonment of government title of large landholdings in favor of privatized holdings (Golas 1980, 299).

In the first one hundred years of the Song dynasty, economic output, standards of living, and population rose dramatically, leading to a recognizably modern economy that featured a large urbanized middle class, a steady stream of new innovations, and an increasingly complex economy (Miyakawa 1955). Military expenditures were robust, tripling between 979 and 1041 (Ebrey 1996, 138).

By the 1080s, this prosperity had begun to taper, and thereafter it began to fall at an accelerating rate. Contemporary observers laid blame for the decline on the “disaster” of socialist reformer Wang Anshi (von Glahn 2005, 71), who seized the commanding heights of production, issued widespread price-and-wage controls, and established state pensions and direct provision of credit (Nourse 1942). Wang's policies followed a philosophy that “[t]he state should take the entire management of commerce, industry, and agriculture into its own hands, with a view to succoring the working classes and preventing them from being ground into the dust by the rich” (Goetzmann and Koll 2005, 100). Wang's interventions reached far beyond economics, including a push against customary vigilantism (Dalby 1981, 278) and extensive reforms and purges of opposition figures in the bureaucracy.

In addition to intervention in production, the other two pillars of Wang's policies were inflationary monetary policy and permanent war. Wang seized control of copper

output, quadrupling the issue of bronze coin (von Glahn 2005, 71), which set off rising inflation. As for military adventures, during his short tenure Wang managed to initiate wars against a series of regional powers simultaneously, including the Ly dynasty in modern Vietnam, and his followers frequently returned to the theme of war. As economic and population declines deepened, the increasingly strained military suffered its first major military loss, giving up the northern half of the empire to the steppe Jurchen, who had been invited into an alliance against a third kingdom, the Liao. Encouraged by Song military incompetence in the field against the Liao, the small Jurchen turned on their ally, quickly taking the capital and forcing the Song court to flee to the south.

Despite the contemporary consensus that Wang's policies were economically catastrophic (Levine 2008), his ideas were enormously influential for the remainder of the Song era due to his successful promotion of sympathizers within the bureaucracy and his successful purging of Confucian opposition. Wang's formulation became the dominant Legalist economic policy competing with economically laissez-faire Confucianism as China's dominant economic philosophy, at least through the Ming dynasty and even into the People's Republic of China, which continues to lionize Wang.

After the Jurchen conquest, the rump empire was reconstituted as the Southern Song, making up approximately half the area and population of the original empire (Ebrey and Walthall 2013). The Jurchen styled their new empire the Jin dynasty, and the Jin and Southern Song continued in relative prosperity and peace for about forty years after the war, with the Southern Song under the Confucian (i.e., not pro-Wang) emperor Gaozong (1127–62).

Beginning in 1162, a series of inflationist emperors returned to the policies of the doomed unified Song. Emperor Xiaozong (1162–89) was an ardent antireformer, yet he introduced strongly inflationist policies. After the short reign of Guangzong (1190–94), the next long-ruling emperor, Ningzong (1195–1224), was friendlier to reformers, appointing prominent pro-Wang minister Han Tuozhou. Ningzong again increased burdens on the private sector, launched war against the Jurchen Jin, and built up the economic situation to one of hyperinflation. In a striking historical repeat, the Song again allied with a dangerous neighbor, this time the Mongols under Ogedei Khan, against another neighbor, the Jin. The result was very similar as the Southern Song's military performance encouraged the Mongols to turn their attentions to it. The Mongols went on to harness the former Song Empire, then the world's most powerful economy, to aid their conquest of Eurasia.

### *Productivity Timeline*

Long-term economic output and population estimates for the Song illustrate two periods of rising and then falling prosperity, summing to an M-shaped pattern over the entire dynasty. As earlier noted, contemporary observers blamed the first decline on the wide-ranging reforms instituted by prime minister Wang Anshi (Levine 2008), in office from 1069 to 1076 but exerting deep political influence afterward. Support for the

timing of this inflection point is confirmed by gross domestic product (GDP), production, and even population estimates.

Estimates for Song GDP and population begin several decades into the dynasty, by which time the Song economy is estimated to have a per capita income substantially higher than that of contemporary Great Britain. Indeed, early Song per capita GDP was not matched in China until well into the twentieth century, exceeding both the Ming dynasty (by 50 percent) and the Qing dynasty (by 90 percent) (Banister 1987). Stephen Broadberry begins his estimate at 980, two decades after the founding of the dynasty, and indicates that per capita GDP remained at that same level for a century before beginning a decline sometime “before 1086.” Broadberry estimates per capita GDP (in 1990 international dollars) at \$1,328 in 980 and \$1,244 by 1086, after which it fell into a decline to \$962 by 1120 (2013, 20)—a 23 percent decline in thirty-four years, making it a dramatic change compared to the sustained wealth over the previous century.

Output figures confirm the pattern of dramatic and lasting prosperity inflecting around 1070–80 and then leading to accelerating decline (Broadberry, Guan, and Li 2012). Since 800, iron output had grown five times (Hartwell 1967) and then six times (Wright 2007), before declining sometime between 1064 and 1078 (Wagner 2001). Other metals enjoyed similar rises in the early Song; silver by three times, bronze by twenty-three times, tin by fifty-three times, and lead by forty-nine times (Du 1998). Notably, these rises were consistently higher for the industrial metals (tin, lead) than for intermediate metals (bronze) and strongly wealth-led metals (silver), suggesting that industrial output rather than trade alone was driving wealth. Agriculture productivity had risen dramatically, with the introduction of new seed varieties, including the *champa* variety of rice from the South (Golas 1980, 296), which led to population movements from north to south (Deng 2013) and rising crop yields across the empire. This rise in agricultural productivity paired with rising craft production in rural areas (Golas 1980, 299), again suggesting rising incomes to the extent that luxury-goods output is a proxy for general incomes.

Further data come from coal output, which, like iron, can be a broad indicator of production as well as of wealth (in the Song, coal was a superior good to charcoal). Tim Wright quotes Robert M. Hartwell (1962, 153–62) that the “peak of pre-modern Chinese use of coal” was sometime before 1126 (2007, 405), consistent with the inflection points and preceding the actual Jurchen conquest. More precisely and closer to the period of Wang’s policy influence, Hartwell writes, “it is clear that there was a drastic decline which took place during the decades immediately preceding and following the conquest” (1967, 153). The decline would thus have occurred before about 1100. Indeed, by 1100, the main Song iron-mining region had been abandoned, despite significant remaining reserves that were indeed exploited centuries later by the Qing and even after World War II (Hartwell 1967, 153). We might expect economic disruption after the conquest, but Hartwell’s placement of the decline before 1100, subsequent to three hundred years of rising prosperity and only several decades after Wang, is consistent with the Wang inflection point.

A third indicator beyond GDP and production is population estimates. Patricia Buckley Ebrey and Anne Walthall estimate that the Song-area population doubled between 742 (mid-Tang) and 1100, citing wet-field rice cultivation, rising commercialization of the economy, and the introduction of paper money (2013, 147) (noneconomist historians often assume that paper money is a productivity improvement). Judith Banister estimates that the population rose from 54 million in 1014 to 108 million in 1086, an annual rate of nearly one percent per year (1987, 4). In the following century, however, the population growth rate fell, slowly at first but then turning into actual decline. Again per Banister, as soon as the first decade after Wang's rise, population growth declined to two-thirds that of the previous decade (0.8 percent versus 1.2 percent decade on decade), then gradually leveled off such that population estimates a century later, in 1193–95, were actually lower than in 1103, falling from 123 million to 122 million (1987, 4).

Connecting the dots between GDP, output, and population estimates, and consistent with contemporary observers, we see a pattern of long prosperity inflecting around the last decades of the eleventh century, following the rise of Wang-style policies. Notably, this decline was decades before the Jurchen conquest, suggesting the inflection, rather than the war itself, was to blame. In the next section, I turn to a third set of contemporary data points in the monetary realm.

### *Monetary Timeline*

Among the more economically interesting characteristics of Song China was its widespread use of paper money. To trace its origins, we are indebted to Gordon Tullock's (1957) examination of China's monetary history. During the Tang dynasty, copper coins were promoted, and customary silk bolts were outlawed as currency (Ebrey 1996, 156). Beginning in the eighth century, goldsmiths and commodity brokers began to issue tradable receipts. By the early 800s, the Tang government used drafts, called "flying cash," to transfer money between provinces (Goetzmann and Koll 2005, 95), and this practice was continued during the Song (Bowman 2013, 105). The drafts were subsequently permitted for merchant use, and receipts and drafts became widely used alongside copper coins (von Glahn 2005). This mixed situation continued through the interdynasty period and into the early Song.

Within a decade of the establishment of the dynasty, the Song began debasing copper coins due to a supposed money shortage (von Glahn 2005, 67). Although money shortages are historically used cynically to justify government debasement, they also helpfully serve as clues to economic growth because deflation typically coincides with growth: more goods chasing a relatively fixed stock of money. Indeed, during the Tang prosperity, the government had also debased coinage, justifying it on the argument that coin needed to be rendered unattractive to speculators (von Glahn 2005, 67). Nevertheless, in the Song case the money-shortage argument would suggest that such a healthy deflation was occurring, which the government partly appropriated via



debasement, a conclusion that agrees with production figures showing that the era saw strong economic growth.

In 970, the Song credit bureau began issuing paper commodity certificates, redeemable for goods controlled by government monopolies, primarily salt and tea (Gernet 1962, 80). These certificate issues were fixed, typically for several years before being replaced with a new issue. These limited issues were allegedly to replace worn-out bills, but, of course, they left the system open to abuse. As a further monetary clue, within twenty years, in 991, the Song issued their first edict forbidding the melting of coins for household goods (Hirzel and Kim 2008), suggesting that issue of these certificates, acting as quasi-money, had outpaced economic growth.

We can infer that the melting edict itself indicates overissue of money because coins would come to be melted only if their value was declining relative to melted copper. Such deterioration in purchasing power (price inflation) amid a rising economy would tend to occur only in two cases: if coins were being debased, such that old coins contained more copper than face value, or if the amount of quasi-money were increasing, drawing monetary demand away from coins. Note that a mere increase in copper output would not have encouraged melting coins because the decline in the value of the existing copper content in coins would occur in identical proportion to a decline in value of melted copper. Population growth would incidentally also not explain why melting coins would become economically attractive, because a 10 percent gain in population, for example, would *ceteris paribus* increase by 10 percent both copper-ingredient demand and money demand.

By 1024, local governments in the Song Empire had begun printing their own certificates, again at fixed issues (Morton and Lewis 2005, 97). These certificates often traded at a premium for more than sixty years until Wang's reforms (von Glahn 2005, 71). This premium would normally suggest that the market believed redemption of the certificates to be nearly guaranteed in the backing commodities, but the value of these certificates appeared to hold up for another reason: their acceptance as tax payment. Richard von Glahn writes, "Previously, it was an article of faith that specie convertibility was essential to maintaining popular confidence in the value of paper money," yet as notes, including Sichuan's qianyin, held up their value, "Song fiscal officials began to emphasize acceptance of paper money in state payments rather than specie convertibility as the key to maintaining the value of fiat currencies" (2005, 75, 76). In other words, to remain stable, a currency needed only acceptance as payment of tax; it needed no backing. The certificates were consequently made *de facto* irredeemable, initially with little impact on their value.

This distinction matters because at this point the Song were indeed issuing mere paper, "fiat" currency. Without need to back the paper currency's issue, there was in practice no constraint on how much of it was issued. This possibility lay fallow for decades until, as Tullock (1957) reports, the government under Prime Minister Wang Anshi realized it could use inflation for budgetary purposes.

Indeed, Wang's program of antagonizing the private sector while raising government outlays would have been financially untenable without some external source of

financing. At war with so many adversaries, Wang needed guns and butter but had a shrinking private sector to pay for it. He managed to square this problem by using that fallow opportunity and simply printed the money he needed.

We can trace Wang's predicament. His principal interferences in output were nationalization of key industries; interventions in agricultural markets, including price controls; subsidized loans for peasants; new property taxes; and progressive taxes replacing labor conscription (Wang 1997, 27–28). This targeting of large landholders was followed much later by outright seizure and redistribution of large landholdings under Jia Sidao (Adshead 2004, 90–91). Meanwhile, Wang raised government outlays in the form of public assistance and subsidized credit to the poor. All of these initiatives were expensive in terms of both declining tax revenue and outlays. As Wang's fiscal situation deteriorated, even copper coin issue rose dramatically, from 1.7 billion coins in 1064 to nearly 6 billion by 1081, compared to just 100 million coins during the Tang in 834 (Ch'en 1965, 619). Meanwhile, in response to price inflation, between 1078 and 1085 private copper mines were ordered closed (Ch'en 1965, 615), an action that indeed removed one source of inflation because copper coins acted as a competing currency to government-issued certificates. However, of course, the closing of the copper mines had little impact on inflation as government certificate issues continued their massive expansion.

This continuing inflation led to, for the first time in nearly fifty years, a discount on unbacked government certificates: von Glahn records a shift from a 10 percent premium still enjoyed in 1076 to a 10 percent discount just nine years later (2005, 71). Wang continued to increase annual issues, enlisting the new technology of wood-block printing to enable industrial-scale issues (Ebrey 1996, 156). This increase predictably set off “the first recorded monetary crisis attributed to the overprinting of money” (Goetzmann and Koll 2005, 103). By 1107, for example, the Sichuan jiaozi certificate had fallen to just 10 percent of face value, and a new imperial currency was introduced, the qianyin, which within a single year fell again to just 10 percent of face value (von Glahn 2005, 71), a proper hyperinflation. In 1103, a decree forbade the smelting of iron coins (Ebrey 1996, 142), suggesting an ongoing flight into real goods typical in hyperinflation (Mises 1949, 427): quasi-money certificates had been so devalued that even iron coins were no longer worth their face value. Hyperinflation accelerated into the Jurchen conquest as both military requirements and economic disruptions rose.

After the Song lost the war with the Jurchen and the court had retreated to the South, coins were devalued, as is often the custom in new dynasties as a source of seigniorage, dropping from 65 percent to 54 percent copper content (Ch'en 1965, 620). Printing quotas continued as a major area of contention between central and local authorities; the central government was typically more conservative, maintaining stable issues, whereas local authorities were more aggressive in their money creation (von Glahn 2005, 72). The latter is economically logical because local authorities could print money for use in other jurisdictions, exporting the inflation but keeping the seigniorage.

With the rise of inflationist emperor Xiaozong, from the early 1160s the Southern Song's central government returned to the Wang stance in money as in war. Having already seen the power of unbacked money, it immediately outlawed competing issues, persecuted hoarders, again ramped up the annual note issue, and formally ended convertibility to commodities in 1168 (von Glahn 2005, 75). Starting from a base of 10 million guan per issue, the issue reached 18 million by 1183, then 30 million by 1195, 55 million by 1207, and 140 million by 1234 (von Glahn 2005, 77), the last issue before the Mongols seized the palace and, with it, the money-printing blocks.

These note issues at first did not cause inflation because the currency was expanded gradually into new regions of the empire, increasing demand for money and thus mitigating purchasing-power losses from its rising supply. However, by increasing the issues, “[t]he government was setting a trap for itself” in that “eventually the point would be reached where paper money circulated throughout the empire and any further expansion would cause a decline in the value of money” (Tullock 1957, 398).

This point was reached by 1190 (Lui 1983) as the rising issues sparked a second round of significant inflation; by 1209, the price of rice had again doubled against the price in 1200 (Goetzmann and Koll 2005, 102). This severe inflation continued until the Mongol wars, when it accelerated as a result of war expenditures, leading to widespread civil discontent. Indeed, “[t]he Southern Song Dynasty was spared the fate of complete currency collapse only by its occupation and then dissolution at the hands of the Mongols” (Schlichter 2011, 200). This terminal civil discontent was expressed in peasant riots among the poor and in defections to the invading Mongols among the rich, who had become increasingly fleeced, especially in border regions, by the Song government's arbitrary seizure of their wealth (Adshead 2004, 90–91). Although these revolts and defections feature prominently among historians who write about this period and indeed serve as excellent indicators, they are merely symptoms of the underlying fiscal troubles enabled by the issue of unbacked paper money.

## Bureaucracy Timeline

So far I have argued that a key step in explaining the Song decline is finding the economic inflection point and that evidence points to the period surrounding the reforms instituted by Wang Anshi in the unified Song, which featured the fiscal use of inflation, a strategy later adopted by Emperor Xiaozong in the Southern Song. In this section, I go into some depth on the particular policies that Wang and his followers introduced and the economic philosophy that guided their interventions. This history matters for tracing the durability of Wang's ideas, which allowed a repeat of the policy crisis that destroyed the Southern Song as well.

Into the early Song, the economic role of government was essentially Confucian; state and economy were viewed as symbiotic (a philosophy known as *fiscalism*), so officials were encouraged to practice *wu-wei* (no action or *laissez-faire*) and pacifism (Hu 2006). Hartwell writes: “The most important requisite of the financial specialist

was a mastery of classical monetary analysis, and it was this knowledge that distinguished the ‘minister who understands money and grain (*chin ch’ien-ku chin ch’en*)’ from ‘those who amass wealth (*chui-lien chin ch’en*)’” (1971, 296).

A succinct synopsis of fiscalism comes from Chang Fang-p’ing, finance commissioner between 1034 and 1038, whom Hartwell quotes: “If food and money are governed by the use of exchange values (*ch’ing-chung*), then the needs of the people will be satisfied, the requirements of the government supplied. By this means, even a weak state may become powerful. If the principles of exchange values are not understood, then the populace will be distressed, the country impoverished, and even a powerful state will become weak.” Hartwell goes on to quote Commissioner Chang’s contempt for several Tang-era ministers who had “seized arbitrary duties like thieves and violent robbers” and “merely snatched wealth from the taxpayer” as endangering the very dynasty (1971, 297).

This encouragement of symbiotic fiscalism and the economically benign policies it suggested was reflected in the required texts for the all-important civil service exams. One of Wang Anshi’s major goals was, indeed, to rewrite the economic canon of the imperial examination to reflect his own policy preferences. His success planted an intellectual seed in future generations of economic bureaucrats. This specific effort is what magnifies Wang’s influence on policy far beyond his short tenure—as noted, well into modern China.

Wang saw himself as repairing the many deficiencies of Song society and criticized the *wu-wei* philosophy of the imperial bureaucracy, which, to him, tolerated injustice. In Wang’s and his many sympathizers’ view, “resolving the intractable evils of invasion from abroad and worsening inequality at home required a renaissance, a rejuvenation of society in the robust image of hallowed antiquity, when the ruler’s benevolent touch reached every corner of the realm” (von Glahn 2005, 71). To realize his reformist revolution, Wang massively increased taxation on large landholders, used credit and progressive taxation to redistribute landholdings, nationalized the commanding heights of the economy (tea, salt, wine), promoted paper currency over copper coins, and outlawed copper mining. He provided direct loans to peasants, monetized taxes and the corvée to bypass landlords and local authorities (tax monetization imported greater value to paper money because it raised money demand), and pursued an aggressive foreign policy, increasing spending on the military and invading both the Champa Empire to the south (in modern Vietnam) and the Jurchen to the north.

Most importantly from a bureaucratic perspective, Wang completely rewrote the canon of the imperial examination, reenforcing his bureaucratic takeover by imprisoning and exiling his critics while installing a new generation of interventionist fiscal bureaucrats. Ari Levine provides a detailed discussion of this battle and “the final factional blacklists (*dangji*) that effectively end[ed] the conflict” (2008, 8).

As was typical since the Sui dynasty five hundred years earlier, the imperial examination during the Song was important in granting power to bureaucrats because it was used to determine one’s entry and rank in the bureaucracy. In practice, the entire

canon had to be memorized in order to pass the exam, yet fiscal officials were also required to apply the canon to practical problems. Hartwell describes, for example, one question in which the aspirant had “to trace and critically examine the history of experiments in maintaining the value of token coins by circulating full-bodied currency” (1971, 304). Economic questions on the exam required thoughtful application of the canon’s implications and were surprisingly modern in their focus on practical problems. For example, one question from the pre-Wang era asked how a bureaucrat could help when input prices are high in one region, but output prices are high in another—the answer being to subsidize transport between the regions. The general philosophy was that the state’s role is to unburden commerce, so it flows like water: both taxes and incomes rise, making the people content and the state well funded (Hartwell 1971, 304).

Wang Anshi thoroughly changed the imperial examination curriculum, eliminating classical texts that had stood for centuries as required memorization on the exams, promoting in their place his own favored writers and even his own rewritings of those classical texts as required memorized curriculum for the exams. Whereas the exam for fiscal bureaucrats had previously focused on the beneficial effects of allowing market prices, light taxation and regulation, and objective analysis of the nature and causes of inflation (often important in peasant revolts), Wang’s changes shifted to a more confrontational stance between regulator and market, creating a strong role for bureaucrats to fix alleged deficiencies in the market.

Although these radical reforms were quickly abandoned as their economic consequences became apparent, Wang had discovered a way to influence the bureaucracy far beyond his own policy-making ability by putting the canon politically up for grabs while packing the bureaucracy with ideological allies. This interference was continued after Wang: “[S]tarting with Wang Anshi’s rise to power, a series of influential grand councilors gained monarchical approval to pack the bureaucracy with like-minded subordinates” (Levine 2008, 2). This discovery was novel and unfortunate; the imperial exam system had admirably maintained continuity of wisdom, with a conservatism—or “prejudice” in the Hayekian (Hayek 1992) formulation—that tread lightly in changing time-tested institutions and rules. To the extent that the imperial exam curricula played the role of the modern education system, this shift is important.

Key to the Wang supporters’ ability to take over this evolutionary canon is that the built-in exam conservatism had already been fatally weakened by Wang’s greatest contemporary enemy, a similarly well-studied figure to this day, Sima Guang. Sima, trained under the old imperial exam curriculum, was effectively the leader of the opposition to Wang’s reforms and today is viewed as the ultimate reactionary to Wang’s revolution. Anthony Sariti argues that *wu-wei* made up not only the core of Sima’s economic policy but also the core of his philosophical approach to governance, captured in Sima’s assertion that “[g]overning the empire may be likened to living in a house. If it becomes worn, one repairs it. Unless there is great ruin, one does not build it anew” (1972, 57).

And yet, however vigorously Sima opposed Wang, he unwittingly became Wang’s greatest enabler as an unintended consequence of Sima’s efforts to shift control of

power from the emperor to the bureaucracy. This shift unwittingly put the storied exam curriculum into political play. Sima's campaign against imperial authority came amid the early Song debate over "to what extent and by what means the emperor shared power with his advisers and bureaucrats" (Mote 2003, 310). Sima was a great champion of the independent bureaucracy, free of imperial interference, and he turned his talents to winning bureaucratic independence from the emperor.

By the 1060s, a decade before Wang's emergence, Sima had convinced the powerful emperor Renzong (1022–63) to delegate economic management wholly to the fiscal bureaucracy, flattering the emperor that his greatness precluded involvement in such small matters as pig raising. Sariti frames Sima's argument: "From his exalted seat, the emperor was to observe the grand design and to set the general tone of government. He was not expected to bother himself about the day-to-day affairs of government. This was left to others" (1972, 68).

Sima had unwittingly created an agency conflict between the emperor (as principal) and his agents in the fiscal bureaucracy as well as planted the seed of ever-spreading fiscal intervention. That is, by creating an independent fiscal bureaucracy that could decide its own level of intervention, he unwittingly developed an incentive for interventionism in that increased intervention justified a larger bureaucracy (see Niskanen 1971 on bureaucratic budget maximization). Sima had, in effect, fashioned a cancer that renewed itself from the inside. This scheme turned against Sima almost immediately when Renzong's young successor, Shenzong (1067–85), plucked the obscure Wang from a regional post to serve as prime minister in 1069. Sima, ousted from power by Wang, spent his political exile writing histories and vigorously criticizing Wang's reforms, while Wang himself served as the perfect instrument to expand the fiscal bureaucracy's influence and interventionism.

Wang's actual tenure was relatively short: by 1075, he was temporarily imprisoned then lost power the following year, as his policies were blamed for famine, which was followed by widespread bankruptcy and peasant revolt in North China. Notably, Wang was not actually deposed by Emperor Shenzong but by Shenzong's conservative mother. Yet although Wang may have been deposed, his ideas remained influential through disciples who remained in power, prominent among them the notorious Cai Jing, who was blamed directly for the conflict with the Jurchen. In practice, despite their failure when in power and Wang's own disgrace, Wang's followers' period in the wilderness was short. With the dowager's death, Shenzong's son Zhezong (1086–1100) reinstated pro-Wang officials.

Zhezong's successor, Huizong (1101–25), revered Wang and explicitly continued his policies through to his own end, driving the empire deeper toward hyperinflation and economic decline for his twenty-five-year reign until, facing Jurchen armies, he was captured while fleeing the court and sent to Manchuria to be humiliated at the Jurchen court. Wang's short tenure thus turned into, via his exploitation of the imperial exam system, a full five decades of economic decline, interventionist policy, and, ultimately, hyperinflation.

After the fall of the Song to the Jurchen, the anti-Wang emperor Gaozong, whose reign began in 1127, reestablished the Song in the southern rump of the empire. Gaozong declared several prominent Wang supporters as traitors to the dynasty for their economic policies and strictly limited the periodic issues of paper currency, thus checking inflation. He announced an explicit return to the pre-Wang *wu-wei* economic policies and stable money and continued relatively tight money issue throughout his thirty-six-year reign (Mote 2003, 292–96).

Alas, soon after Gaozong's passage, inflationist policy once again returned with Emperor Xiaozong beginning in 1162. Xiaozong immediately replaced Gaozong's tight-money chancellor Qin Hui, outlawed private currencies, and raised money issues. Inflation rose at a compounding rate, breaking into hyperinflation once more by the end of his reign. After the short reign of the "mentally unstable" Guangzong (1190–94) (Dillon 2016, 638), pro-Wang emperor Ningzong (1194–1224) continued Xiaozong's policies, echoing Emperor Huizong's history of wars, hyperinflation, economic collapse, and an ignominious end. Ningzong appointed the prominent Wang-influenced chancellor Han Tuozhou and again embarked on an aggressive purging of both the classics from the imperial exam and classicists from the bureaucracy. Prime Minister Han launched his "New Policies," imitating even the name of Wang's reforms, and the result was again nearly identical: rampant inflation, worsening government finances, and the launching of wars with neighbors after, in this case, sixty years of peace. The result was identical: the Southern Song fell again to steppe people, this time the upstart Mongols. In the end, the main pro-Wang advocates in the Southern Song, Han Tuozhou and Cai Jing, were memorialized under the heading "Biographies of Treacherous Ministers" in the official Song history (Mote 2003, 318).

In sum, Sima and Wang's complementary efforts created a clear break within Song economic regulation, clearing the way for deeply interventionist policies. These policies ultimately came in two waves, in the 1070s and again in the 1160s, leaving economic decline, inflation, and war in their wake. Despite his historical reputation as a bulwark against Wang, Sima had ironically cleared the way both for the unlimited economic policy-making power that Wang exercised and abetted Wang's intellectual colonization of the fiscal bureaucracy.

Although Wang officially held power for less than a decade, and despite his contemporaries widely condemning his policies, his intellectual influence continued through the destruction of, first, the Northern Song dynasty and then the Southern Song dynasty. One might draw a parallel with the modern Progressive movement in the United States, officially a short-lived movement that nonetheless exerted enormous influence on policy makers by means of a "long march through the institutions" of academia and government (Rudi Dutschke's famous rephrasing of Antonio Gramsci; for discussion see Marcuse 1972). In both cases, a formally short-lived movement managed to extend its influence for more than a century afterward, principally not through its policies but through its intellectual influence on policy.

## Explaining the Song Inflections

The Song dynasty twice turned from a Golden Age to terminal and catastrophic decline. Both periods of decline were announced by hyperinflation, economic decline, and popular unrest and culminated in conquest by numerically weak rivals.

Indeed, the Song offer a fascinating case study precisely because the salient economic, monetary, and military events of both periods of catastrophe echo each other so closely. The first period of high inflation in the Song dynasty started under Wang Anshi, and then inflation rates accelerated within twenty years and continued at relatively high rates for another twenty years, briefly peaking into hyperinflation before the Jurchen felled the empire. The second inflation began under Emperor Xiaozong, accelerated for thirty years, and continued at sustained high rates another thirty years, again briefly peaking into hyperinflation and ending with the Mongol conquest.

We have, then, three important markers: two rises of Wang-style economic intervention, two bouts of sustained high inflation, and two very similar military conquests. On what should the blame be placed?

I earlier argued that the military explanation alone is insufficient; the mismatch between the Song dynasty and its adversaries was dramatic, and the timing of the conflicts with the Jurchen and Mongols was suspiciously coincidental: Jurchen and Mongols had lived in peace with the Song for three hundred years, yet both conquered the Song within decades after Wang-style policies were instituted and after a similar delay following the onset of high inflation.

Was inflation the cause of the twin collapses? The problem in answering this question is that in both collapses proper hyperinflation—an annual rise of more than 50 percent in prices—was brief, and even sustained hyperinflation is, in modern times, surprisingly benign to production. Hyperinflation's modern reputation for economic catastrophe was perhaps earned during Weimar Germany, but in the late twentieth century we have many examples of robust growth during hyperinflation in countries with credible economic statistics, such as Brazil and Argentina, and often lasting much longer than the twin peaks of Song inflation. The implication is that hyperinflation itself is harmful but certainly not an automatic catastrophe of the magnitude to explain the two Song collapses. Stanley Fischer, Ratna Sahay, and Carlos A. Végh (2002) and Phillip Cagan (1956) record relatively insignificant effects on overall GDP, and William Easterly and Stanley Fischer (2001) find that disproportional harm falls on the poor and on savers, but not on the productive sectors of society. Indeed, the recent cases of hyperinflation in Brazil, Argentina, and Poland illustrate that although hyperinflation is harmful to savers and disproportionately affects the poor, it has a small impact on production compared to, say, the harm done by the kind of property-rights violations seen in countries such as Zimbabwe.

So inflation, even brief hyperinflation, is a wonderful clue to what happened to the Song, but it is unlikely by itself powerful enough to have collapsed the dynasty. However, rising inflation may be a very useful indicator of wider decline. If we consider



the Song government through the lens of modern public-choice theory, we can see that the ability to print unlimited amounts of money provided a new and potentially dangerous tool to governments. In *The Wealth of Nations*, Adam Smith called paper money a “waggon-way through the air” ([1776] 2003, 409), meaning that it appears to be a free bonus: just as you can farm the extra land freed up by a highway in the sky, you can use metals freed up by paper currency. At the same time, Smith’s metaphor intentionally conveys the dangers of paper money: one must drive carefully on a highway suspended in the air.

In practical terms, the Song dynasty discovered this free “bonus” by spending more than it took in taxes. Had it stopped there, paper money might have been relatively benign, even beneficial insofar as taxation via inflation might have imposed lower deadweight and administrative costs on producers than would direct taxation. But the dynasty did not stop there; rather, it continued on the highway in the sky, with increasing recklessness.

This recklessness came in the ability to neglect tax revenue by patching over deficits with new money. This had two significant impacts on Song economic regulation. First, it allowed government spending to increase, creating constituencies for new spending such as welfare payments and subsidized loans. Second, reduced reliance on taxation meant a fundamental weakening of the symbiotic relationship between the treasury and the private sector. It risked crippling the natural feedback mechanism by which policies that harass or burden the private sector would be corrected in order to support tax revenue. The ability to print money instead insulated the government from the effects of its policies, allowing them time to become entrenched.

We see evidence of this theoretical process in the simultaneous decline in economic output and increase in inflation. As the economy declined, inflation rose beyond money issuance (as economic theory predicts it would, due to declining demand for money in a declining economy), ultimately culminating in hyperinflation as private-sector harassment and money issuance intersected at a much lower equilibrium level of output. Although hyperinflation may appear to a noneconomist historian as a bolt from the blue, the underlying effects of hyperinflation begin mundanely. Like a compounding function grabbing attention at the vertical asymptote, the actual hyperinflation grabs attention, but the cause is the far more mundane process of compounding inflation. Why does inflation compound? Because government’s fiscal situation is subject to a reinforcing cycle in which it must continually increase inflation once it has begun (Mises 1949). Taxes collected and stored will begin to progressively lose value, necessitating an ever-increasing level of money issue, which will in turn lead to more erosion in what taxes are collected, and so on. This feedback loop is well recorded in Weimar Germany, where it culminated in a government almost entirely supported by the issue of money rather than with taxation. This ratcheting of taxation and seizure can reach a magnitude that will starve the entire government, including the military, of funds, necessitating a dramatic acceleration of money issue that gives us a proper hyperinflation.

The twin hyperinflations of the Song are thus important indicators, showing us the point at which the government effectively “panicked,” maximizing money issuance. In both cases, and again related directly to that “paradox of advanced industry and commerce coinciding with pathetic national defense” (Deng 2013, 4), both hyperinflation and widespread property seizure antagonized landholders (as savers), large and small. Again, the record is consonant with this process, showing the intensifying peasant uprisings in the decades following the two Wang-style initiatives. The first revolt culminated in Wang’s disgrace, and the second revolt resulted in widespread defections, especially of large landowners, to the invading armies.

In terms of impact on economic policy makers, this process resembles a well-studied phenomenon known as the “natural-resource curse” or “paradox of plenty,” wherein natural-resource endowments apparently retard economic growth (for a discussion see Rosser 2006). In this case, seigniorage from the issue of money can play a role analogous to natural-resource revenue, permitting a government to neglect the rest of its sources of tax revenue. Since the late 1980s, a large literature has developed on institutional factors in the resource curse. Giacomo Luciani argues that a state with resources does not need to “formulate anything deserving the appellation of economic policy: all it needs is an expenditure policy” (1987, 73), and Terry Karl argues that resources permit states to shift from the “promotion of private investment” to the “political distribution of rents” (1997, 21). Andrew Rosser states that “[b]ecause these states have large amounts of unearned income to spend . . . they tend to develop greater capacity in distributive functions such as social welfare, education, and health and productive functions” (2006, 15, citing Garaibeh 1987 and Chaudhry 1994). Finally, Richard Auty and Indra de Soysa describe the postwar experience of resource-rich countries consistent with this institutional interpretation, writing that “most governments in resource-rich countries deployed their rents in ways that cumulatively transferred inputs from competitive activity to uncompetitive activity. This . . . caused economic growth to decelerate[, and] rendered the economy increasingly vulnerable to external shocks and a growth collapse” (2006, 33).

In a resource curse, a government becomes relatively independent of private-sector productivity because it can fund itself by taxing or seizing natural resources. Similarly, the mere ability to fund a government via the printing press can reduce reliance on private-sector performance and therefore reduce regulators’ incentives to promote commerce. Because increased issue of money raises prices gradually and unevenly via Cantillon Effects (Cantillon 1755), working through a market process of diffusion (Rothbard 1962), the early receivers of new money gain an unearned bonus—in the case of direct government issue of new currency, that bonus accrues to the government itself. Further tempting monetary authorities, the undiluted money can be handed to favored constituencies, but costs via inflationary dilution will be borne by later receivers of the money, such as those paid on fixed contracts or paid customary dues.

In the Song case, then, the ability to print money would have allowed burdensome policies to survive. These burdensome policies were nothing new; even during the Tang

dynasty, policies such as landholding mutualization were occasionally experimented with. The key innovation during the Wang-style episodes, the innovation that made them ultimately so harmful, was the ability to “paper over” the economic damage from such burdens by resorting to the printing press. This seigniorage revenue from increased money issues provided crucial protection to the fledgling but harmful policies, allowing them to bureaucratically metastasize. Even after high inflation became entrenched, the Song government’s response was to increase its burdens, becoming increasingly heavy-handed in seizing resources from the productive sector, most dramatically under Jia Sidao against the Mongols, rather than gently reversing the burdensome policies. This compounding process ultimately culminated in widespread property seizures, which brings us to the well-documented antagonizing of powerful landowners, whose defection to the enemies was crucial in shifting the balance of power toward the Jurchen (Tanner 2009, 214–15) and later the Mongol invaders (Miller 2008, 11).

In the first Song invasion, it was the Jurchen who had lacked the crutch of paper money. By the second invasion, the Jurchen had mastered paper money and indeed now fell alongside the Song to the Mongols, who, again, were too unsophisticated to have learned the fine art of insulating fiscal bureaucrats from the private economy via paper money.

In conclusion, then, the two most-cited explanations for the fall of the Song, its military weakness and hyperinflation, can be traced as mere symptoms of an underlying substitution of paper money for tax revenue, a process that allowed the empire to become independent of private-sector performance in the short term, thus permitting it to become more parasitic than symbiotic. As the economy declined, this process led to a ratcheting up of both property-rights harassment and money issuance, fatally eroding both productivity and loyalty even as government capabilities declined as a result of emphasis on unproductive, if well-intentioned, welfare spending. Such an economic process raises concerns for modern economies that are increasingly reliant on deficit finance to paper over “secular stagnation” in economic growth while maintaining “guns-and-butter” spending policies.

## References

- Acemoglu, Daron, Simon Johnson, and James A. Robinson. 2001. The Colonial Origins of Comparative Development: An Empirical Investigation. *American Economic Review* 91, no. 5: 1369–401.
- Adshead, Samuel. 2004. *T'ang China: The Rise of the East in World History*. Basingstoke, U.K.: Palgrave Macmillan.
- Ascher, William. 1999. *Why Governments Waste Natural Resources: Policy Failures in Developing Countries*. Baltimore: Johns Hopkins University Press.
- Auty, Richard, and Indra de Soysa. 2006. *Energy Wealth and Governance in the Caucasus and Central Asia: Lessons Not Learned*. New York: Routledge.
- Baldwin, Richard, and Coen Teulings. 2014. *Secular Stagnation: Facts, Causes, and Cures*. London: CEPR Press.

- Banister, Judith. 1987. *China's Changing Population*. Stanford, Calif.: Stanford University Press.
- Bowman, John Stewart. 2013. *Columbia Chronologies of Asian History and Culture*. New York: Columbia University Press.
- Broadberry, Stephen. 2013. *Accounting for the Great Divergence*. Economic History Working Paper no. 184/13. London: London School of Economics and Political Science.
- Broadberry, Stephen, Hanhui Guan, and David Li. 2012. *China, Europe, and the Great Divergence: A Study in Historical National Accounting, 980–1850*. London: London School of Economics and Political Science.
- Cagan, Phillip. 1956. The Monetary Dynamics of Hyperinflation. In *Studies in the Quantity Theory of Money*, edited by Milton Friedman, 25–117. Chicago: University of Chicago Press.
- Cantillon, Richard. 1755. *Essai sur la nature du commerce*. London: Frank Cass.
- Chaudhry, Kiren A. 1994. Economic Liberalization and the Lineages of the Rentier State. *Comparative Politics* 27, no. 1: 1–25.
- Ch'en, Jerome. 1965. Sung Bronzes: An Economic Analysis. *Bulletin of the School of Oriental and African Studies, University of London* 28, no. 3: 613–26.
- Dalby, Michael. 1981. Revenge and the Law in Traditional China. *American Journal of Legal History* 25, no. 4: 267–307.
- Deng, Kent G. 2013. *Demystifying Growth and Development in North Song China, 960–1127*. Economic History Working Paper no. 178. London: London School of Economics and Political Science.
- Dillon, Michael. 2016. *Encyclopedia of Chinese History*. New York: Routledge.
- Du, Wenyu. 1998. Comparative Study of Tang and Song Dynasty's Economic Strength. *Researches in Chinese Economic History* 4:37–52.
- Easterly, William, and Stanley Fischer. 2001. Inflation and the Poor. *Journal of Money, Credit, and Banking* 33, no. 2: 160–78.
- Ebrey, Patricia Buckley. 1996. *The Cambridge Illustrated History of China*. Vol. 1. Cambridge: Cambridge University Press.
- Ebrey, Patricia Buckley, and Anne Walthall. 2013. *East Asia: A Cultural, Social, and Political History*. Boston: Cengage Learning.
- Fischer, Stanley, Ratna Sahay, and Carlos A. Végh. 2002. Modern Hyper- and High Inflation. *Journal of Economic Literature* 40, no. 3: 837–80.
- Garaibeh, Hesham. 1987. Government Income Sources and the Development of the Taxation System: The Case of Jordan, Egypt, and Kuwait. In *The Rentier State*, vol. 2, edited by Hazem Beblawi and Giacomo Luciani, 194–210. London: Croom Helm.
- Gernet, Jacques. 1962. *Daily Life in China, on the Eve of the Mongol Invasion, 1250–1276*. Stanford, Calif.: Stanford University Press.
- Goetzmann, William N., and Elisabeth Koll. 2005. The Origins of Paper Money in China. In *The Origins of Value: The Financial Innovations That Created Modern Capital Markets*, edited by William N. Goetzmann, and K. Geert Rouwenhorst, 91–104. Oxford: Oxford University Press.
- Golas, Peter J. 1980. Rural China in the Song. *Journal of Asian Studies* 39, no. 2: 291–325.

- Hartwell, Robert M. 1962. A Revolution in the Chinese Iron and Coal Industries during the Northern Sung, 960–1127. *Journal of Asian Studies* 21, no. 2: 153–62.
- . 1967. A Cycle of Economic Change in Imperial China: Coal and Iron in Northeast China, 750–1350. *Journal of the Economic and Social History of the Orient/Journal de l'Histoire Economique et Sociale de l'Orient* 10, no. 1: 102–59.
- . 1971. Financial Expertise, Examinations, and the Formulation of Economic Policy in Northern Sung China. *Journal of Asian Studies* 30, no. 2: 281–314.
- Hayek, F. A. 1992. *Why I Am Not a Conservative*. Sidney, Australia: Centre for Independent Studies.
- Hemingway, Ernest. 1935. Notes on the Next War: A Serious Topic Letter. *Esquire Magazine*, September.
- Hirzel, Thomas, and Nanny Kim. 2008. *Monies, Markets, and Finance in China and East Asia*. Volume 1 in *Metals, Monies, and Markets in Early Modern Societies: East Asian and Global Perspectives*. Berlin: Lit Verlag Münster.
- Hu, Shaohua. 2006. Revisiting Chinese Pacifism. *Asian Affairs: An American Review* 32, no. 4: 256–78.
- Karl, Terry L. 1997. *The Paradox of Plenty: Oil Booms and Petro-states*. Berkeley: University of California Press.
- Landes, David. 2006. Why Europe and the West? Why Not China? *Journal of Economic Perspectives* 20, no. 2: 3–22.
- Leeson, Peter T. 2008. Escaping Poverty: Foreign Aid, Private Property, and Economic Development. *Journal of Private Enterprise* 23, no. 2: 39–64.
- Levine, Ari Daniel. 2008. *Divided by a Common Language: Factional Conflict in Late Northern Song China*. Honolulu: University of Hawai'i Press.
- Luciani, Giacomo. 1987. Allocation vs. Production States: A Theoretical Framework. In *The Rentier State*, vol. 2, edited by Hazem Beblawi and Giacomo Luciani, 63–82. London: Croom Helm.
- Lui, Francis T. 1983. Cagan's Hypothesis and the First Nationwide Inflation of Paper Money in World History. *Journal of Political Economy* 91, no. 6: 1067–74.
- Maddison, Angus. 1998. *Development Centre Studies: Chinese Economic Performance in the Long Run*. Paris: Organization for Economic Cooperation and Development.
- Marcuse, Herbert. 1972. *Counterrevolution and Revolt*. London: Allen Lane.
- Miller, Harry. 2008. *State versus Gentry in Late Ming Dynasty China*. New York: Palgrave Macmillan.
- Mises, Ludwig von. 1949. *Human Action*. New Haven, Conn.: Yale University Press.
- Miyakawa, Hisayuki. 1955. An Outline of the Naito Hypothesis and Its Effects on Japanese Studies of China. *Far Eastern Quarterly* 14, no. 4: 533–52.
- Mokyr, Joel. 1990. *The Lever of Riches: Technological Creativity and Economic Progress*. New York: Oxford University Press.
- Moore, Mick. 2001. Political Underdevelopment: What Causes Bad Governance? *Public Management Review* 3, no. 3: 385–418.

- . 2004. Revenues, State Formation, and the Quality of Governance in Developing Countries. *International Political Science Review* 25, no. 3: 297–319.
- Morton, William Scott, and Charlton M. Lewis. 2005. *China: Its History and Culture*. London: McGraw-Hill.
- Mote, Frederick. 2003. *Imperial China 900–1800*. Cambridge, Mass.: Harvard University Press.
- Niskanen, William A. 1971. *Bureaucracy and Representative Government*. Chicago: Aldine-Atherton.
- Nourse, Mary Augusta. 1942. *Short History of the Chinese*. New York: New Home Library.
- Pomeranz, Kenneth. 2000. *The Great Divergence: China, Europe, and the Making of the Modern World Economy*. Princeton, N.J.: Princeton University Press.
- Rosser, Andrew. 2006. *The Political Economy of the Resource Curse: A Literature Survey*. Working Paper no. 268. Brighton, U.K.: Institute of Development Studies.
- Rothbard, Murray N. 1962. *Man, Economy, and State*. Vol. 2. Los Angeles, Calif.: Nash.
- Sachs, Jeffrey D., and Andrew M. Warner. 2001. The Curse of Natural Resources. *European Economic Review* 45, no. 4: 827–38.
- Sariti, Anthony William. 1972. Monarchy, Bureaucracy, and Absolutism in the Political Thought of Ssu-Ma Kuang. *Journal of Asian Studies* 32, no. 1: 53–76.
- Schlichter, Detlev S. 2011. *Paper Money Collapse: The Folly of Elastic Money and the Coming Monetary Breakdown*. Hoboken, N.J.: Wiley.
- Smil, Vaclav. 1993. *China's Environmental Crisis*. New York: M. E. Sharpe.
- Smith, Adam. [1776] 2003. *An Inquiry into the Nature and Causes of the Wealth of Nations*. New York: Bantam Classics.
- Sng, Tuan-hwee. 2010. *Size and Dynastic Decline: The Principal-Agent Problem in Late Imperial China, 1700–1850*. Evanston, Ill.: Department of Economics, Northwestern University.
- Tanner, Harold M. 2009. *China: A History*. Indianapolis, Ind.: Hackett.
- Tullock, Gordon. 1957. Paper Money: A Cycle in Cathay. *Economic History Review* 9, no. 3: 393–407.
- Von Glahn, Richard. 2005. The Origins of Paper Money in China. In *The Origins of Value: The Financial Innovations That Created Modern Capital Markets*, edited by William N. Goetzmann and K. Geert Rouwenhorst, 65–90. Oxford: Oxford University Press.
- Wagner, Donald B. 2001. The Administration of the Iron Industry in Eleventh-Century China. *Journal of the Economic and Social History of the Orient* 44, no. 2: 175–97.
- Wang, Chi. 1997. Some Historical Reflections on Chinese Economic Reforms: From Wang Mang to Deng Xiaoping, 9 A.D. to the Present. In *Assessment of China into the 21st Century*, edited by A. M. Canyon, 23–34. New York: Nova Science.
- Wolf, Alex. 2008. *A Short History of the World*. New York: Metro Books.
- Wright, Tim. 2007. An Economic Cycle in Imperial China? Revisiting Robert Hartwell on Iron and Coal. *Journal of the Economic and Social History of the Orient* 50, no. 4: 398–423.