

1. AGRARIAN ECONOMIES AND THE INDUSTRIAL REVOLUTION

A. Overview (9/4)

0. General Notes

- Neolithic revolution: Agricultural revolution

1. †Peter Temin, "Evolutionary History," *Journal of Interdisciplinary History*, 28: 405-15 (Winter 1998). [Review essay of Jared Diamond, *Guns, Germs and Steel: The Fate of Human Societies* (New York: Norton, 1997).]

- Temin contrasts evolutionary and economic approaches to history
 - Most notable difference is time frame: economic historians work in decades or centuries while evolutionary historians work in millennia
 - Diamond's explanation of why some nations rich and others poor starts in 8000 BC
 - Finds most important differences are geographical & environmental, factors largely ignored by economic historians.
 - Continental orientation: Eurasia lies east-west while Americas and Africa lie north-south
 - Agriculture spreads more rapidly across longitudes (i.e. horizontally), because it takes evolutionary time for plants to adapt to new climates
 - Environmental: Availability of plants and animals available for domestication favored Eurasia (e.g., only large animal available for domestication in the Americas was the llama).
 - Agricultural advantages:
 - Allows denser populations which speeds the innovation
 - Develop resistance to animal borne diseases
 - Those who got to the Industrial Revolution first were those who got to Agricultural Revolution first
 - Where agriculture developed on its own
 - Fertile Crescent
 - China
 - Central America
 - Andes
 - Eastern United States
 - Temin's views on Diamond's shortcomings:
 - Provide coarse explanations. Don't allow us to look *within* centuries
 - Gives no role to institutions. Modern economic historians believe institutions explain much of difference in growth rates.
 - Completeness. Diamond's theories explain much but not, for example, why China stopped overseas trade.
 - Development of indigenous agriculture in other areas at same time as fertile crescent did not lead to economic development.
 - Temin, invoking Gershenkron, suggest that in narrower timeframes, political forces dominate evolutionary forces.
 - Did note, however, that Kremer (1993) derives an economic model with constant returns to knowledge that yields similar results to Diamond's model (more populous areas -> more innovation -> more development).
- #### 2. †Joel Mokyr, *The Lever of Riches* (New York: Oxford University Press, 1990), Chapter 9, pp. 209-238.
- Why did China, source of so many early technological innovations, stop technological progress in 1400? Also, why did Europe overtake China when China was initially more advanced?
 - Mokyr's argument: largely the result of government's preferences. While government had supported innovation up to 1400, for a still unknown reason, the government became more conservative around 1400 and withdrew state support for invention.

- No significant technological progress in China after 1400. In fact, some earlier technologies, such as clock making, appear to have been forgotten.
- Straw men explanations are offered:
 - China wasn't slow in absolute terms, just slow in comparison with Europe. But this ignores that Chinese development after 1400 is slow *when compared to China itself before 1400*.
 - "High-level equilibrium trap": China's population growth rates forced it to focus on agricultural innovation, but the opportunity for technological change in agriculture is limited. But China's population shrank by over 30% from 1580 to 1650.
 - Rice dependency led to protein deficiencies and decline in average nutritional status → weakening of labor force below what was required for technological progress
 - Chinese frame of mind "not suited to scientific and technological progress" and an unwillingness to exploit nature: but this just doesn't match the facts before 1400
- China had an empire and one government, thus "one decision maker could give the technological process a mortal blow"
 - Emperors after 1400 preferred stability
 - All geographic expansion halted after 1430 by imperial court
- Early Chinese government supported innovation
 - Officials in government published books on farming
 - Provided financial in to invest in farming improvements
- Why emperors changed their preferences remains unknown
- cf. Europe:
 - Chinese empire was, in general, a large, unified land mass whereas Europe was fragmented by a rough coastline and mountains. Thus, a single polity formed in China whereas multiple competing polities formed in Europe. Political competition in Europe may have increased returns to implementing innovations while lack thereof in China may have stifled innovation.
 - In Europe, invention and innovation was largely a private matter, whereas it was state-sponsored in China.
 - Best and brightest in China co-opted with bureaucratic jobs rather than attracted to merchant class; bureaucratic states have little incentive to sponsor innovation changing status quo.
 - **Main Contrast:** Europe was private, competitive; China state, suppressive.

B. European Expansion (9/9)

0. General Notes

1. †Avner Greif, Paul Milgrom and Barry R. Weingast, "Coordination, Commitment, and Enforcement: The Case of the Merchant Guild," *Journal of Political Economy*, 102: 745-76 (August 1994). www.jstor.org
 - Use repeated game model to conclude that merchant guilds emerged during the late medieval period to allow rulers of trade centers to commit to the security of alien merchants.
 - Commercial revolution of the middle ages: 10th through 14th centuries
 - Trading centers needed to be organized in a way that secured property rights of traders. Edward I recognized the public goods problem: merchants put off coming to detriment of the kingdom.
 - Simplest view of state as an institution that enforces contracts and property rights and solves a public goods problem poses a dilemma: a state with the power to do these things also has the power to confiscate wealth. Rulers could gain by breaking contracts with some traders when traders were poorly organized.
 - Merchant guilds emerged to enhance ruler's ability to commit and in doing so laid important foundations for growing trade in period.
 - Merchant guilds took various forms. Generally, merchants from a single area who had some control over trade in their own land, but could also monitor overseas treatment of

their countrymen. Had access to *information* and resources to *enforce trade boycotts* on their own members. Examples:

- Germany: *Hansa* developed out of the *Kontors*. Traditional *Kontors* had the power to coordinate boycotts, but only among those towns that chose to participate. As it became clear that for boycotts to be effective towns needed to coordinate, several German *Kontors* worked together to enforce boycotts. Out of this emerged the *Hansa*.
- In Italy, no such formal institutions. Cities in Italy were large enough to have effective individual boycotts, so intercity coordination was not necessary. Intra-city coordination was handled by a subdivision of the city administration.
- “Maghribi Traders”: Mediterranean merchants. Members ostracized and retaliated against agents who violated their commercial code. Interrelated contractual arrangements motivated merchants to participate in collective retaliation against cheaters.
- Article gives various examples of breach of contract that highlight the need for “*institutionalized commitment* to security”.
- Formal Model
 - Players: Cities (trading center) and large number of small traders
 - Payoffs: city incurs cost per unit traded when providing protection, traders incurs cost per unit of trade. Cost such that net value of trade positive. Net value achieves maximum at a certain optimal level of traders defined as *efficient volume of trade*. City levies a tax on traders. City breaks contract by extracting taxes from traders but not providing protection. Protected traders earn positive profits; unprotected lose trading cost and taxes. Traders have option of not returning the following year.
 - Game 1: traders have no information about treatment of others and thus make decisions about future periods based entirely on own treatment → no Nash Equilibrium can support host trade at the efficient level b/c at efficient level the cost to the city of cheating are small relative to the gains.
 - Game 2: Small circle of traders who find out if one trader is cheated → still no NE at efficient level, even if *all* traders with information about cheating threaten not to return next year
 - Game 3: Introduces guild to disseminate information. If city cheats anyone, guild finds out with positive probability (increasing in number of traders cheated), and announces boycott to all traders. Leads to Markov perfect equilibrium where (1) city does not cheat unless guild announces boycott, then cheats everyone after boycott is announced and (2) traders only trade with particular city in no boycott. Note the results are counterintuitive (i.e., they don’t make much sense) because city could benefit by attracting and trading honestly with small number of traders once boycott announced. With some model restrictions, there’s a SPE with city protecting only those traders that it’s never cheated before and traders continuing to trade if they haven’t been cheated (i.e., traders ignore boycott).
 - Game 4: informally discussed, but considers guild with the ability to enforce boycott. Results similar to Game 3, but traders must participate.
- Authors realize model is highly stylized. Guilds more complex than modeled, but this demonstrates potential benefits of guilds to both states and traders.
- Need for guilds diminished as political systems developed. For example, eventually English kings enforced embargos among English merchants themselves; Bank of England, after Glorious Revolution in 1688, had the ability to announce a credit boycott and to punish lenders who attempted to lend to the government.
- Guilds became monopolistic, e.g. *Hansa* in Germany, and crushed new trading groups *without regard to their relative efficiencies*. This hindered expansion in pre-modern period.

2. †Jared Diamond, *Guns, Germs and Steel: The Fate of Human Societies* (New York: Norton, 1997), Chapter 18, pp. 354-75.
 - Why Europeans conquered the Americas and not the reverse
 - Euro conquest of Americas wiped out 95% of native population. Diamond argues that this was the result of differences between the two worlds dating back to 11,000 BCE.
 - Four proximate explanations
 - Biological differences
 - Variety of animal species: Eurasia had abundance of large mammals used for nutrition, wool, transportation, war vehicles, power for agricultural and industrial production.
 - Variety of plant food production: Both quality of plant species suitable for domestication and the benefits of animal power. In 1492, most Americans still hunter gatherers. Eurasian agriculture yielded more calories and protein per person-hour of labor.
 - Differences in harmful germs: European diseases, evolved from close contact with domesticated animals, killed substantial portion of Americans during post-Columbian collisions. Also, village settlements appeared much later in Americas.
 - Technological differences
 - Metal use: Iron, copper & bronze vs. wood, stone & bone
 - Military technology: use of animals and metals in warfare
 - Machinery: wheels are the big difference here
 - Political differences: by late medieval and Renaissance times, most of Eurasia was separated into states. History of conflict and warfare. Only the strong survived. They also gained military experience. In contrast, the two large American empires, the Aztecs and the Incas, had almost no history of large conflict.
 - Cultural differences: “literature bureaucracies”. Writing→facilitated political administration, economic exchanges, guilding, exploration, conquest, extending human knowledge.
 - Ultimate explanations
 - Head start: Eurasia occupied about 1 million years earlier
 - Wild animals and plants for domestication
 - Geographic differences: east-west vs. north south; fragmentation and aridity of much of Americas
3. †Daron Acemoglu, Simon Johnson, and James A. Robinson, “The Colonial Origins of Comparative Development: An Empirical Investigation,” *American Economic Review*, 91: 1369-1401 (December 2001).
 - What are the fundamental causes of large differences in per capita incomes across countries? While it’s obvious that institutions matter, AJR look for a way around the endogeneity issue:
 - Rich economies may be able to afford or prefer better institutions
 - Omitted variables may be causing both
 - Institution measures created ex post and analysts may have natural bias in assigning “better institutions” to richer places.
 - AJR believe that differences in mortality rates faced by European colonists provide exogenous variation. The argument:
Potential Settler Mortality ⇒ Settlements ⇒ Early Institutions ⇒
⇒ Current Institutions ⇒ Current Performance
 - Need some key assumptions: persistence of institutions, that 19th century mortality rates are a good proxy for mortality rates at time of colonization (may not be a good proxy), that factors other than mortality rates (size of existing population, religious freedom, etc.) were unimportant in determining type of settlement.
 - Assume high mortality rate led to extractive institutions whereas low mortality rate led to “European” (i.e. English) institutions.

- Test hypothesis by regressing current performance on current institutions, instrumenting for current institutions with settler mortality rates.
 - Include controls to deal with some potential problems: climate and current disease environment, geography and some other potential determinants of income. Main potential problem: lots of individual country variation not captured here.
- Data: from 64 countries. Per capita income as measure of long-term economic performance.
- Strong first-stage between settler mortality and current institutions: interesting by itself.
- Authors caution that results do not imply predetermination. Colonial experience *affects* institutions, it does not determine them. Also, does not address which institutions are important.
- Conclusion: Different colonization strategies associated with different institutions, these institutions persisted and explain a great deal of current differences in development. In the U.S., Australia, and New Zealand, the institutions developed that enforced the law and encouraged investment. In places where Europeans were less likely to settle due to high mortality rates, like Africa, they set up extractive institutions.

C. English Institutions (9/11)

0. General Notes on this period of English history:

- England in the 17th century was going nowhere: Crown passes from Tudors to Stuarts in 1603. The century marked by wars, usurpers to the throne, etc.
- In 1688 the “Glorious Revolution”, so called because there was little bloodshed, changed all that. Following the GR: a period of stability. Parliament invited William of Orange (Dutch) to become king of England.
- Interesting questions: (1) why stability after 1688, (2) what were the economic effects on government, (3) assuming there was a change in government that led to a change in economic function of the gov’t, what was the effect on the private markets that were the source of the Industrial Revolution?

1. †Douglass C. North and Barry R. Weingast, “Constitutions and Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth-Century England,” *Journal of Economic History*, 49: 803-832 (December 1989). www.jstor.org

- Political factors, including rules governing exchange, enforcement mechanisms, and the ways these rules can be changed, underpin economic growth and the development of markets.
- To increase the expected returns of investment, government must establish relevant rights *and* make a credible commitment to them.
- Commitment to rights comes in two forms:
 - Setting a precedent of “responsible behavior” (this one is very seldom seen)
 - Constraining self to obey a set of rules that do not permit leeway for violating commitments.
- Before GR in 1688, fiscal needs of wars led to increasingly arbitrary rule, with sovereign continually redefining his rights to collect money from subjects. This led to civil war, but with only partially successful changes. Sovereign brought back but another civil war 25 years later.
- Winners want government to be more credible in honoring agreements: secure property rights, protection of wealth, elimination of confiscatory government. Parliament (which represented the wealthy) approval was required for sovereign to change agreements. New institutions [what] also constrained Parliament from just replacing crown and acting irresponsibly themselves.
- N&W cite increasing availability of funds to government after reforms as evidence that lenders perceived increase in government credibility and security of rights.
- Key assumption: rulers have strong preference for current utility (high discount rate) due to demands of war.

- Pre-GR institutions that superceded Parliament
 - Royal prerogative: allowed crown to issue new rules, enforced by the prerogative courts, not by common law court.
 - Star Chambers: combinations of executive, legislative, and judicial powers. Under certain circumstances would reverse decisions against crown
 - Personal responsibility for day-to-day government, e.g. paid the judges.
- After civil war, in 1641, the Star Chamber was dissolved, restrictions against monopolies enforced, a regular standing Parliament was established, and the royal administrative apparatus was dismantled. But abolition of monarchy and House of Lords failed and Stuarts were restored in 1660. While new rule had many differences, one key similarity remained: arbitrary action by the king. This leads to Glorious Revolution.
- Following Glorious Revolution: parliamentary supremacy, new central role in fiscal matters for Parliament, curtailing royal prerogatives. King still more than a figure head, but more balance in government, including an independent judiciary.
- Why didn't parliament become just as bad as king:
 - Centralized administrative apparatus was dismantled
 - In a group setting, may have been difficult to act completely in self-interest - there likely would have been some checks on bad-behavior; the larger the group, the less likely the ability to get a majority to sign on to myopic strategies. Commercially minded Whig coalition had power at key time (political constraints)
 - Creation of politically independent judiciary
 - Cost of conferring private benefits higher in committee setting.
- Fiscal Revolution: before GR, government borrowings often not repaid and sovereign arbitrarily reduced interest rates. After: expenditure veto by Parliament, earmarking of taxes limited discretion. **Key result: interest rates that the government had to pay to borrow declined while amount borrowed went way up.**
- But, alternative hypothesis says it wasn't Glorious Revolution that led to fiscal changes, but rather King Williams need for large armies to fight France. Data available are insufficient to pinpoint when rates changed.
- Other contrary evidence: newer literature upgrades France's economic performance prior to their revolution (1789), putting it on par with that of Britain, detracting from the importance placed on common law and democracy by the author. In other words, the argument put forth by some is that despite France's authoritarian rule, it's economic progress was on par with that of "democratized" England (I guess until IR hit).
- Authors reply that government of Louis XIV did not repress economic activity as one might believe. BUT, the next article seems to imply that arbitrary governance in Paris lay in contrast to the environment in London and Amsterdam and ability to enforce "fair play" in financial markets.
- North and Weingast argue these changes had a parallel effect on private markets
 - Government wasn't crowding out
 - Increasing range of projects became economically feasible
 - Beginning of large-scale trading in private securities and formation of banks
 - Query: where did money come from? Improved capital markets? Increased savings rate? Switch to formal savings from burying money?
- Summary of key institutional changes
 - Limited Crown's legislative and judicial powers→ less arbitrary behavior
 - Parliamentary interests took lead in taxation issues
 - Parliamentary role in allocation of funds and expenditure monitoring with credible threat of removing sovereign who got out of line
 - Created balance between Parliament and Crown—rather than eliminating the Crown as happened after the Civil War—thereby limiting Parliament's own ability to act arbitrarily.

2. †Larry Neal and Stephen Quinn, "Networks of Information, Markets, and Institutions in the Rise of London as a Financial Centre, 1660-1720," *Financial History Review*, 8: 7-26 (April 2001).
 - Bill of Exchange: A credit instrument drawn on the importing merchant by the exporting merchant to (i) finance trade between production and sale and (ii) exchange currencies. Bill accepted by agent of exporter, and can be sold or transferred.
 - A contrast to North and Weingast's hypothesis on why financial markets developed in England.
 - Financial markets developed in London during the period from 1660 to 1720 in response to increasing international trade.
 - In contrast to Amsterdam, London lacked a specific institution to coordinate information on bills.
 - London-based bankers developed the ability to take advantage of favorable exchange rate differentials (both geographical and type of payment) through a network of merchants and bankers that spanned nations, religions, and trade specializations.
 - This reduced London bankers risks in dealing with international bills of exchange. Their overseas agents owed a substantial part of their business to the respective London banking house and, therefore, had significant incentives to maintain a reputation for fair and prompt dealings.
 - Overseas agents were monitored by a diverse group of British and foreign merchants who remitted bills of exchange between London and abroad in part to finance trading activities.
 - In response to this classical principal-agent problem, London bankers focused on establishing accounts with proven and reputable associates in key trading centers such as Paris, Amsterdam, and Cadiz.
 - As they widened their network, they outgrew the ability of foreign agents to sanction behavior [whose behavior] by religious or family ostracism or by collective action with other merchants in a foreign port against an expropriating prince or merchant
 - London bankers and agents only subject to domestic law at each port.
 - **Foreign bill exchange arbitrage was already well established prior to the Glorious Revolution. The implication, the London-based financial revolution was a product of these merchant networks and not the Glorious Revolution**
 - In merchant controlled cities of London, Amsterdam and Hamburg, merchant law governed the settlement of disputes arising from protested bills of exchange; by contrast, in Paris and Madrid the often arbitrary law of the monarch ruled.
 - Authors use case study rather than market data
 - "Bill of exchange" system first developed in Amsterdam in 17th century (strong government and monopoly bank in Holland). The system spread to London in 18th century. It works best in balanced trade.
3. †Robert C. Allen, "The Great Divergence in European Wages and Prices from the Middle Ages to the First World War," *Explorations in Economic History*, 38: 411-47 (October 2001).
 - Compiles an overview of real wages in European cities from 14th century to WWI with four goal in mind:
 - Explaining seemingly contradictory observations: marked improvement in variety and quantity of "luxury" items among artisans and farmers in England and the Netherlands during 17th and 18th centuries while real wages have been presumed to be falling across Europe during this period
 - The relationship of stature and income: would a more distributionally sensitive measure of income (like the real wage) be a better predictor of heights, which in turn are considered a proxy for well-being.
 - Where did England's lead in per capita income as of 1850 come from? Wages didn't grow much in England from 1770 to 1850.
 - Place the standard of living debate in an international and long-term context

- Main conclusion: the dominant pattern in early modern Europe was income divergence. England and the low countries had somewhat higher real wages than the rest of Europe in the 15th Century. Over the next three centuries, real wages declined by almost one half in the rest of Europe, but stayed roughly stable in northwestern Europe. Only between 1870 and 1913 did the standard of living in the industrial part of the continent rise appreciably above early modern levels.
 - Data:
 - From 19 European cities
 - Wages: nominal in building sector (construction workers & craftsmen. Note may be issues with using construction data due to London fire's effect on construction demand). Relies on assumption of functioning labor market. While urban wages were higher, differences in rent worked to bring some convergence between rural and urban real wages.
 - Price data: from institutional buyers (orphanages, armies, etc.). Didn't have bread data (probably the #1 expenditure), so constructed it based on mark-up over grain prices (often not a market b/c institutions baked their own).
 - Constructed a Laspeyres (initial weights) price index for each city. This index might be fine prior to the 19th century, but technological innovation during the Industrial Revolution weaken its validity.
 - Calculates real wages based on this
 - Results: dispersion lowest in early 16th century. Over next 250 London wages went up, Antwerp and Amsterdam stayed the same, rest eroded.
 - Why did Industrial Revolution take place in England: wages were far enough above poverty line to fuel a consumer revolution. Elsewhere in Europe, wages often pushing the limits of starvation.
 - Possible causes: 1. Glorious Revolution 2. Emergence of private bankers 3. Higher wages -> higher productivity.
- D. Malthusian Demography (9/16)
0. Some background on Malthus & Demographic Transition
 - Demographic Transition
 - Population growth is equal to births minus deaths plus net migration
 - Stage 1: deaths fall (particularly infant mortality), births don't change, population growth increases
 - Stage 2: births fall by more than death and growth slows
 - High pressure demographic regime: high birth rates & high death rates
 - Malthus's model

Things start going well and wages rise ⇒ population grows ⇒ wages fall ⇒ population falls

 - Preventative check: birth rates fall in response to economic difficulty (people marry later and have fewer kids)
 - Positive check: tough times increase mortality (famine, wars, etc.)
 - Miscellaneous knowledge:
 - Sincepre-IR England was already in a low-pressure demographic environment when population growth expanded [in the late 18th and 19th centuries], this must have come from fertility increase
 - Black Death around 1350 killed between ½ and 1/3 of European population, and wages grew significantly by the 15th century, after which wages hit a downward trend (southern) or stagnated (northern) through most of Europe (as mentioned above), with England ending up on top in terms of real wages on the eve of the IR.
 1. Peter Laslett, *The World We Have Lost: Further Explored*, third edition (Cambridge: Cambridge University Press, 1983), Chapters 4-5, pp. 81-121.
 - Giving us some demographic background on England from 1570-1870

- Population grows by 25% between 1570 and 1600, then rate of increase drops off until 1780's when growth rate surges. Between 1780 and 1810, pop grows by 40%, and then grows by 50% between 1810 and 1840. 1840 to 1870 grows 44%.
 - Data from marriage license applications to Canterbury diocese from 1619 to 1660 (obs=1007).
 - Marriage ages were high (avg for men 26½, for women 23½. No one under the age of 21 could be married without parental permission.
 - Women in gentry married, on average, 2 years earlier than average.
 - Menarche average was 15.6 years in Manchester in 1835
 - Approximately 1/8 of population in service at any time
 - Don't see large, multi-generational households. Couples formed new household upon marriage. Though notes that poor and very poor ere more likely to live in extended family units.
 - Relative cost of housing was less than it is now.
 - Not all women married
 - Young people needed to get a job to afford marriage→more mobility of working age, pre-marriage population→greater spatial consistency of prices & improved information
 - Brides brought dowry and savings from work in service and perhaps ability to continue to earn through other skills, usually spinning & weaving. Women with few resources had a hard time marrying.
 - Needed to wait until a "slot in society" opened up. Work for an experienced apprentice or a cottage.
 - Russia was different. More on the Asian family system (extended) and marriages took place quite early.
 - England low-pressure population regime
 - Lots of breakup and dislocation of families due to death of husband (rendered family unit unviable) or wife.
2. †Ronald Lee, "An Historical Perspective on Economic Aspects of the Population Explosion." In Richard Easterlin, Ed, *Population and Economic Change in Developing Countries* (Chicago: University of Chicago Press, 1980), pp. 517-557.
- Test Malthus hypothesis that (1) high population growth →low wages, and (2) low wages →low population growth
 - Data: from 404 English parishes from 1540 to 1800
 - Model:
 - Two-sector (industry and agriculture), closed economy model
 - Share of industrial and agricultural output in national income stay constant when valued at current prices
 - Ignores capital
 - Investment in agriculture left exogenous and constant. There's a weakness here because agricultural investment and technical change were probably more rapid when rents and agricultural prices were relatively high and these amounts depend on population.
 - Assumption: Other sources of long-run economic change (technology, capital accumulation, etc.) formerly weakened or absent, so we have ceteris paribus situation.
 - Results
 - Real wage *very sensitive* to population change, with elasticity of -1.5
 - This elasticity is consistent across subperiods
 - No significant acceleration in the trend of the relationship between population and wages in 18th century, the early stages of Industrial Revolution
 - Demand for labor increased significantly after 1810
 - Lots of short run variability

- In pre-industrial Europe, population swings were largely autonomous, not a response to economic variation. Mortality is closely related to population change, but fertility is not closely related to economic changes and mortality is largely exogenous.
 - Evidence supports part (1), high population growth → low wages. The economy could only absorb population growth of 0.4% with little effect. Changes relative to this had dramatic consequences for wages.
 - No relationship between wages and population growth (part 2 of Malthus); concludes that exogenous variation in mortality accounted for most of variation in population growth rate. Some endogeneity in fertility and mortality rates from wages, but small amount of total variation (15%).
 - Problems:
 - Something seems wrong here, in that support is much too strong. Estimated η of -1.5 is inconsistent with any Cobb-Douglas predictions.
 - Have flow, but not stock data (e.g., don't know age distribution to get number of women of child bearing age)
 - Don't have migration data
 - Parish records exclude people outside Church of England
 - Policy implications: can't expect demographic adjustment mechanism to act as break on population growth
3. †Chiang, Chin Long, "The Life table and its construction," In Chin Long Chiang, *Introduction to stochastic processes in Biostatistics* (New York: John Wiley, 1968), Chapter 9, pp. 189-217.
- Describes how to construct a life table
 - Two types:
 - Cohort life table: based on study of given group of individuals (e.g., everyone born in California in 1904) over time
 - Current life table: study of entire population at single point in time. Statisticians typically use this one because its hard to get data for cohort life table. Gives expectation of life for the average person in year y as if they were age x . ONLY gives the expectation of life for someone born in 1960 if death probabilities stationary.
 - Results of both can be displayed either as complete life table (entry for each year) or abridged life table (grouping into larger age intervals).

E. The Demographic Transition (9/18)

1. †George Boyer, "Malthus Was Right After All: Poor Relief and Birth Rates in Southeastern England," *Journal of Political Economy*, 97: 93-114 (February 1989). www.jstor.org
 - Why did birth rates rise in England in the late 18th century?
 - Tests hypothesis that outdoor relief (aid to poor people not living in state facilities) to able-bodied workers promoted population growth. Aspect that is presumed to have strongest effect is payment of child allowances to laborers with large families.
 - Malthus strongly argued against Poor Relief, believing it would increase fertility, remove natural checks, and ultimately increase poverty.
 - Variance in child allowances across parishes comes from the level at which the allowance kicked in (>3 , >4 , or >5 children).
 - Boyer tests hypothesis using birth rates across parishes in southeast England (where child allowances were particularly widespread) from 1821-1830. Estimates: $\text{birthrate} = \text{income} + \text{density} + \text{housing} + \text{ChildAllowances} + \text{other stuff}$
 - Boyer finds that when other socioeconomic determinants of fertility are taken into account, child allowances, incomes and housing availability did indeed promote population growth. Child allowances at 3 kids → +25% birthrate
 - Data also suggests Malthus right in other matters:
 - Agricultural laborers income had a positive impact on fertility (note that this directly contradicts Lee's findings)

- Birthrates were checked by unavailability of housing
 - Density had a negative impact on birthrates
 - Does NOT support Malthus's assertion that availability of farmland allotments would increase birthrates
 - Questions:
 - Exogeneity of Poor Laws. Boyer tests for exogeneity of child allowances and concludes they are (but this seems a bit odd).
 - Good chance that measurement error is leading to spurious correlation
 - Housing variable: why are there uninhabited houses
 - Problems with using parish birth data, including:
 - Not everyone belongs to Church of England
 - Not all births may have been recorded
 - Does not track migration
 - Flow, but not stock, so must estimate birth rate using births over families residing in the parish.
2. †N. F. R. Crafts, "Some Dimensions of the 'Quality of Life' during the British Industrial Revolution," *Economic History Review*, 50: 617-39 (November 1997). www.jstor.org
- Measuring a broad concept of living standards. It's possible to improve on one scale (e.g., GDP per capita) while falling behind on others (height). Clearly, there are important components of living standards that are not captured by either income or heights.
 - Takes idea of Human Development Index to 19th century Britain and Europe
 - Since aggregation is difficult if not impossible, he looks for Pareto dominance or Borda iterative dominance.
 - Using alternative measures, height included, does not strengthen argument that living standards worsened in Britain in the mid-19th century. 1850 Pareto dominates 1820, which in turn dominates 1790, but any comparison of 1850 to 1830 depends on the weighting of life expectancy and infant mortality (both of which worsened from 1830 to 1850).
 - Calculating these indices for other European countries, Britain tops some measures, but performs poorly in mortality measures, which Crafts attributes to rapid industrialization.
 - Temin: during the Industrial Revolution, despite the significant rise in population, English wages did not fall. Did the Industrial revolution offset downward pressure on wages from population growth? Possible, but perhaps high wages were needed to draw people into jobs in the filthy urban environment.
 - **Real GDP per capita alone is not a satisfactory measure of living standards; correlation with other measures was weaker in the mid-19th century than it is now.**
 - Believes based on evidence from success of legislation such as the Public Health Act of 1875 that appropriate government intervention, costing less than 3% of GNP during the second quarter century of the 19th century, could have significantly improved mortality measures and overall well-being.
3. †Robert W. Fogel and Dora L. Costa, "A Theory of Technophysio Evolution, with some Implications for Forecasting Population, Health Care Costs, and Pension Costs," *Demography*, 34: 49-66 (February 1997). www.jstor.org
- A bit of a wandering article. Here are the highlights:
 - Over the last 300 years, but particularly the last 100, technology ("techno") has made possible changes in the human body ("physio") including a 50% increase in size and improved "robustness".
 - Mortality rates:
 - Have plunged, particularly at the start of the 20th century. This deals the blow to the Malthusian theory that "subsistence is a cliff." There are multiple nutritional equilibria.

- Two waves of life expectancy growth in England and France: c. 1700-1820 and 1870-present. From 1871-1930 alone, life expectancy in Britain increased by 20 years. Only 10% of decline is due to decline in “crisis” mortality (famine, etc.)
 - Food production in Britain and France in 1790 wasn't sufficient to provide survival level of calories for people of today's size. Patchy data suggests they were smaller. Even accounting for smaller bodies, data suggest that the poorest 20% would have been incapable of meaningful work. This is consistent with suggestions that 1 in 5 was a beggar.
 - Waaler surfaces plot iso-mortality curves through height-mass space
 - Suggest changes in height and weight explain a substantial portion of mortality declines
 - Also suggest that there's further room for improvement
 - Theory behind Waaler surfaces has to do with improved nutrition altering chemical composition of organs and nervous system function to improve life expectancy.
 - Combined effect of increases in dietary energy and increased efficiency in transferring energy to work accounts for ~50% of British economic growth since 1790 [until when?]
 - The idea that there are genetic constraints on life expectancy carries less weight now.
- F. The Industrial Revolution: Description (9/23)
1. †T. S. Ashton, *The Industrial Revolution, 1760-1830* (London: Oxford University Press, 1948).
 - A hodgepodge of facts about the industrial revolution summarized by: A WAVE OF GADGETS SWEEP OVER ENGLAND
 - Interest rates fall and markets for allocating capital and labor became more efficient throughout the 18th and 19th centuries. This was a key ingredient in the Industrial Revolution in Britain.
 - A lot of technological advances: steam everything, spinning jenny, Arkwright water frame (spins and winds yarn simultaneously), canals, steel Ashton argues that low interest rates and “sloshing” capital allowed all this to happen simultaneously.
 - *The industrial revolution was an affair of economics as well as technology: it consisted of changes in the volume and distribution of resources (economic allocation) no less than in the methods by which these resources were directed to specific ends (technology). The two movements were closely connected. Without the inventions, industry might have continued its slow-footed progress—firms becoming larger, trade more widespread, division of labor more minute, and transport and finance more specialized and efficient—but there would have been no industrial revolution.*
 - Capital: the growth of savings and facilitation of its investment allowed technological advances to be put to extensive use. Sources:
 - Retained earnings: people reinvested in their own businesses and ran out of investment opportunities in their own firms so found other places to put their money. Anecdotes of merchants becoming big land-owners, industrialists becoming canal builders, etc.
 - Mortgages: growing capital market allowed physical assets to serve as collateral for loans made across large distances within Britain, freeing up mercantile capital for industrial investment.
 - Why was it so hard to raise capital: full liability. Partners liable for the debts of their firm up to their “last shilling and acre.”
 - Lines of credit expanded: suppliers started offering credit lines for working capital [why?]
 - Banks
 - Uncommon outside of London in early 1700s, and London banks oriented to trade and treasury.
 - Provincial banks became common in 1760s, with their notes becoming common currency in local communities, but still insufficient for substantial industrial growth.

- Act of Parliament in 1826 makes possible branch banks open outside of London in 1830s. Bank of England gets in on act.
- Stock exchange of London opens in 1773
- Foreign capital inflows. Drawn by Britain's relatively high interest rates (rates were high relative to Holland, but at the same time had fallen considerably within England).
- Conclusion: Huge increases in size and efficiency of capital markets and mobility. Lots of capital "sloshing around" Britain in search of projects.
- Labor: trend from agriculture and small cottage industry to working in manufacturing "establishments." Why?
 - Technology: many new products, e.g. smelted iron, couldn't be made at home. Processes also required division of labor, which in turn led to economies of scale at plants.
 - Fixed costs, e.g. water wheel, lead to further economies of scale
 - Need for process monitoring drew worker to factory
- Some impediments to this transformation:
 - Unsafe intercity travel due to highway crime
 - Poor Laws tied to parish created disincentive to migrate to work
 - Poor Relief dulled incentives
 - Labor market inflexibility (quasi-apprenticeship system was barrier to entry)
 - New things are scary
 - By the 1830's, the labor force had changed (Not really clear why. Poor Laws gone, the inexorable passing of time, ...?) and woosh!
 - Wages adjusted more rapidly to supply and demand and became more closely correlated across industries
- Individualism and Laissez-Faire
 - Rise of individualism was a myth. If anything, collective behavior increased: collusion in industries, organized labor, industrialist charity, government action
 - State was largely withdrawing from economic activity
- The Course of Economic Change (Ch. 6)
 - The troubles often attributed to the industrial revolution were the result of other forces, the most importance of which were:
 - Price instability due to reduced output of consumer goods (initially) as resources redirected towards capital, money supply instability, external events (war) which caused large variations in price of imports, poor weather, and crop failure.
 - Fluctuation in labor demand: export volatility due to events "abroad", war, etc.
 - My 2 cents: a lot of this was due to the I.R., no?
 - And the government increased taxes on grains and restricted grain imports
 - Key question: did the Industrial Revolution raise the quality of life? Ashton says yes. Eventual increases in consumergoods (goods produced were not luxury goods, improved diet, employment of women and children decreased and wages rose. Downside: long hours and poor working conditions.
- Note Ashton's opinions on population change and the IR:
 - Rapid growth in population during this time was due to reduction in mortality, NOT increases in birthrate as posited in papers above.
 - He attributes fall in mortality to many things, including reduction in "excessive indulgence in cheap gin", **higher use of cotton underwear**, higher vegetable and wheat consumption (where he gets these "facts" I don't know...)
 - IR in UK allowed these increased masses to be absorbed without the nation suffering hunger, disease and/or mass migration as seen in neighboring Ireland, or more recently in places such as India.
 - Refutes two views on links between IR and population growth:

- Population growth did not promote IR by increasing demand. Population growth was rapid throughout Europe at this time, but no other country experienced IR. If this were the case, we might also expect to see IR in countries such as India, China and Egypt in the 19th century.
 - IR did not promote population growth. Since he takes the view that birth rates did not change, but rather population growth was induced by lower mortality, it's unlikely that IR was the cause of lower mortality. (As we saw in Crafts, IR probably promoted higher mortality in cities.)
- G. The Industrial Revolution: Analysis (9/25)
1. †Peter Temin, "Two Views of the British Industrial Revolution," *Journal of Economic History*, 57: 63-82 (March 1997). www.jstor.org
 - Two views:
 - Broad change in British economy, as asserted by Ashton, with improved productivity throughout many sectors
 - Narrow improvement in productivity in only textiles and iron industries, not in manufacturing as a whole, as asserted by Harley and Crafts.
 - Temin tries to come to a conclusion using a simple Ricardian trade model
 - His model supports Ashton's view.
 - The Crafts view implies that "other manufactures" should not have been exported if England was still backward in these.
 - Despite English improvement in ag productivity and higher productivity relative to other countries, it is an importer of ag products and therefore its comparative advantage must be in manufactures.
 - Temin looks at value of imports and exports in England in 1850 and finds most industries keeping pace with textiles in terms of exports, and therefore he concludes that the IR must have had broad productivity implications. Question: Which of the two views of the Industrial Revolution is borne out by the data?
 - Classic: Broad change in British economy and society characterized by a high degree of technical change in many industries as well as advances in other areas, such as capital markets.
 - Crafts-Harley: Industrial revolution occurred only in textiles, iron, and transportation. Thus, Britain only had a comparative advantage in select sectors, not broad manufacturing.
 - Ricardian model of comparative advantage used to index goods along a continuum; general technical change means that more goods should be exported over time, restricted means fewer.
 - Finds that list of exports increased, that Britain was exporting different manufactured goods than it was importing, and that the relative rank order of exports remained constant. This confirms that the classic view.
 2. Peter Temin, "A Response to Harley and Crafts," *Journal of Economic History*, 60: 842-46 (September 2000).
 - Response to Crafts-Harley paper arguing against results of #1. Crafts-Harley used a CGE model to claim that declining agricultural productivity forced Britain to export in order to import agricultural products.
 - Temin replies:
 - This does not respond the original question in "Two Views".
 - There is no evidence of diminishing returns in British agriculture because the supply of arable land increased and relative factor prices do not reflect such a trend.
 - CGE model not the correct test of the technical change hypothesis, and its ability to replicate Britain's experience relies on incorporating diminishing marginal returns to agriculture.
 3. Hans-Joachim Voth, "Time and Work in Eighteenth-Century London," *Journal of Economic History* 58: 29-58 (March 1998).

- Uses witness samples to garner info about working hours during IR in England.
 - Important conclusion – work hours increased dramatically in second half of 18th century, accounting for much of the growth in production and dampening claims of high productivity growth during IR.
 - However, also important to note that marginal returns to labor did not fall even in the presence of incredible pop growth, likely owing to tech progress. accounts of court witnesses and random hour recall method to estimate the change in working hours between 1750 and 1800.
 - Results:
 - The pattern of daily life remained basically unchanged; the timing of daily events as well as the hours spent at work were essentially the same.
 - The pattern of time use during the week and year changed substantially, leading to a substantial estimated increase in yearly hours worked.
 - The practice of “Saint Monday” (taking Monday off) appeared to be fairly common around 1750, but was much less common around 1800.
 - The observance of Holy Days also declined between 1750 and 1800.
 - Questions:
 - Is the sample representative? The sample from around 1800 seems representative of the working-class population, but there is no way to test this for the 1750 sample.
 - Timing of crime?
 - Memory decay?
 - Used evidence from work on Cheshire canal as a test of performance of court data around 1800. Finds that St. Mondays and Holy Days were not observed.
 - Implication: Industrial Revolution may not have sprung so much from technical change as increased labor input—it was an “Industrious Revolution”.
4. David Eltis and Stanley L. Engerman, “The Importance of the Slave Trade to Industrializing Britain,” *Journal of Economic History*, 60: 123-44 (March 2000).
- Basic conclusion – slave trade and slave economy was not of major importance to British IR.
 - Shipping value was very small
 - Colonial economy very small relative to Britain
 - Portugal had much larger and more profitable slave colonial economies, but did not come close to the economic progress of England.

2. THE SPREAD OF INDUSTRIALIZATION

A. The United States (9/30)

0. Background:

- Habbakuk’s Model of why the U.S. industrialized (Temin thinks this in nonsense):
 - U.S. has lots of land→wage is high→labor is mobile so wage is also high in industrial sector→high marginal product of capital (but U.S. didn’t have a whole lot of capital)
 - Problems:
 - High wages in agriculture need not imply high wages in industry.
 - Assumes free trade, which was clearly not the case.
 - Domar’s Impossibility Theorem. Can’t simultaneously have: free land, free labor, and a land-owning aristocracy. North had free land and labor. South and free land and aristocracy.
 - Assumptions: Land and labor only factors of production and CRTS.
 - American system manufacturing: interchangeable parts (e.g., Jerome’s clocks), first introduced through American arms manufacturers. Spread slowly. Perfected in manufacture of bicycles and Ford automobiles (Temin).
1. Peter Temin, “Free Land and Federalism: A Synoptic View of American Economic History,” *Journal of Interdisciplinary History*, 21: 371-389 (Winter 1991). www.jstor.org
- Two factors fostered the industrialization of the U.S.:

- Free land: rich farmland in favorable climates
- Limitations on the political power of large landholders, particularly in the degree to which they could control their workers (note significant difference between the North and the South here)
- Manufacturing developed primarily in the North. See high manufacturing wages, use of labor-saving machinery, and high interest rates.
- Paradox:
 - Industry had to offer high wages to attract workers from agriculture, so used labor saving machinery to do so.
 - Agriculture was very productive and capital was very scarce, so cost of labor was high and the cost of capital should have been high. If U.S. was doing so well in agriculture, and land was essentially free, why do we get manufacturing growth at all?
 - But if they raised productivity on labor by increasing machinery per worker (K:L), then the rate of return to machinery should have fallen. Wages should have been higher than in Great Britain, but interest rates lower. They were not.
 - Answer: protective tariff raised price of manufactures and allowed high interest rates and wages. (First had embargoes during War of 1812, and then new tariff in 1816)
- Differences in North and South: Immigration and federalism are key
 - In North, immigrants come as indentured servants. As wages increase, terms of servitude fall slightly
 - In South, African captives come and ship captains are paid. As wages rise, terms of servitude increase until they eventually become slaves.
 - Initially, Southern economy grew rapidly based on cotton exports to Britain.
 - When North industrialized, South was hindered by slavery:
 - Slaves had little incentive for process improvement
 - Slaves moved west as slave prices in west rose, while the pool of immigrant labor remained in northeast. Depopulation, not industrialization, occurred in old South.
 - Political climate created by slavery did not favor industry: powerful landowners, less widespread education, poorer transportation.
- Role of government: distinctly American
 - Popular nature meant political power conformed to expanding economic interests
 - Federal government: all politics are local, limited power of federal government, little bureaucratic interference.
 - The Cotton Tariff of 1816
 - Designed by Francis Lowell to protect American mills following War of 1812 and re-opening of trade with Britain.
 - Targeted low-end (Asian) of market, not expensive British fabrics
 - Without it, Lancashire would have supplied entire range of cotton goods for American consumption.
- Transition to Mass Production
 - Links to Chandler's "modern business enterprise"
 - Most likely to appear in industries where:
 - Invention of new machines created capacity for few plants to serve entire market. And vast improvements in transport tech (RR) also allowed companies to serve large markets.
 - Centralized production of perishable goods requires manufactures to be involved in distribution in order to guaranty product quality
 - Product required customer service
 - Such large firm flourished in favorable legal environment where antitrust policy was effectively left to states even after passage of Sherman Antitrust Act in 1890.
- Growth

- Amazing thing about American growth between 1870 and 1970 is that during this time, population growth far outpaced its peers (due in large part to immigration), yet it sustained high growth rates in per capita income.
 - 2. Douglas A. Irwin and Peter Temin, "The Ante-Bellum Cotton Tariff Reconsidered," *Journal of Economic History* 61: 777-798 (September 2001).
 - After 1830, the U.S. Cotton Textile industry did NOT require subsidies to survive because American and British products were imperfect substitutes
 - Estimate responsiveness of domestic production to import prices and conclude that industry could have survived even if tariff had been eliminated
 - Arguing against Harley's claim that as late as the 1850s, removal of the tariff would have shrunk output by about 10% of domestic consumption.
 - Tariff consisted of both ad valorem and minimum valuation, thus effective tax was much higher on low-end products (designed to protect northern manufacturers without antagonizing exporters in the south).
 - Removal of minimum valuation in 1846 did not decrease production (resulted in a one year readjustment period). Did significantly increase Britain's exports to the U.S.
 - Summary of facts: Domestic production sensitive to import fluctuations pre-1830, insensitive from 1830-1845, and slightly more sensitive after 1846.
 - Question as to whether 1816 tariff necessary for survival of cotton industry. Unusually bad performance before tariff could be due to one-time factors, such as post-war slump, British dumping, etc.
 - 3. C. Knick Harley, "The Antebellum Tariff: Different Products or Competing Sources? A Comment on Irwin and Temin," *Journal of Economic History* 61: 799-805 (September 2001).
 - Don't buy Irwin & Temin's assertion that American and British products were imperfect substitutes; argue that they were engaging in inference outside the sample range..
 - British production wasn't different. Tariff just meant that British chose to export most heavily taxed product elsewhere.
 - In 1816, following end of embargo, British manufacturers flood U.S. market with excess. It's possible the tariff rates were an overreaction to this event.
 - Tariff set too high → when lowered, still kept prices high enough to allow same amount of U.S. production, so the lowering of the tariff is not evidence enough to conclude U.S. didn't need it.
 - Also, there's evidence that Britain still produced low-end textiles, but they just didn't sell them in the U.S. If the tariff had been completely abandoned, it's likely that they would have been able to out-compete U.S. manufacturers even at the low-end.
- B. Northern Europe (10/2)
1. †Alexander Gerschenkron, *Economic Backwardness in Historical Perspective* (Cambridge: Harvard University Press, 1962), Chapter 1, pp. 5-30.
 - *Temin loves this article*
 - Thinking about industrialization is often dominated by the idea that the development of currently backwards countries is taking a path that closely follows that taken by the now advanced countries when they developed.
 - Gerschenkron acknowledges that while this may have validity in a very broad sense, backwards countries have shown considerable differences in:
 - Speed of industrialization
 - Productive and organizational structure of emerging industries
 - Application of institutional instruments
 - Intellectual climate (ideology) in which industrialization takes place
 - Before industrialization is possible, obstacles such as peasantry or serfdom and the absence of political unification must be eliminated
 - Possibility of industrialization creates tension between actual and potential state of the country. This tension is increasing in the amount of technology that could be adapted from advance countries.

- May explain timing of spread of industrialization from England to New England to France to Germany and, finally, to Russia. What sets off periods of faster growth? (Temin/Class ideas)
 - Revolution/or something else→change in institutions→growth
 - Maybe it's distance: Britain, then France, then Germany then Russia.
 - What about the U.S.? Trade (and therefore tech sharing) is easier across water than over land at this time.
- Although labor is abundant, industrial workforce is scarce. This is one reason why countries tend to industrialize using most modern and efficient technologies that are most labor-saving. Also note that since advanced countries are not continually modernizing, this may give the developing country some initial advantage in a particular industry (e.g., Germany focused on iron rather than textiles and soon overtook Britain in the design of blast furnaces). *But what about China today?*
- Because of complementarity and indivisibility, (coal mines need railroads, financial markets need industrial growth and industrial growth needs financial markets, etc...) and indivisibility (e.g. building half a railroad won't do), industrialization tends to proceed quickly and on a large scale along a number of industrial fronts..
 - Only when the "tension" between backwardness and progress is large, and the obstacles keeping industrialization in check are BROADLY suppressed will industrialization begin, and it will begin not with a whimper, but with a bang!!!
- Example #1: France and Germany
 - In Britain, industrialization proceeded smoothly, without the need of banking for long-term investment purposes because of more gradual nature of process and existence of accumulated capital. Banks in Britain served mainly as a source of short-term capital.
 - To industrialize fast and on a large scale, France developed a different banking system with investment banking as an institutional device to provide long-term capital. These type of banks became more commonplace in other countries as well.
 - In Germany, the French approach was modified by combining long- and short- term lending in universal banks, which were financially sounder than the French banks.
 - A very close relationship developed between German banks and industry, with banks playing important role in entrepreneurial and management decisions.
 - German banks primarily attracted to "heavy industries" such as coal & metals
 - Later concentration in banking induced cartelization of industry
 - Illustrates that relatively backwards countries may use different institutional devices to develop.
- In Russia, banks did not work well because of bad institutions and scarce of savings. The government had to force savings by heavy taxes.
- Russia:
 - State prime mover of economic growth and policy, and its motivation many stemmed from military needs.
 - Private capital virtually nonexistent in Russia because of poor business honesty practices, including frequent fraudulent bankruptcies. State had to take over this function at first until St. Petersburg banks emerged.
- Delays in industrialization allow sinister social tensions to develop (e.g. Soviets). Example of Russia
 - Late eradication of serfdom (1861) inhibits any IR.
 - IR not until 1880's; focus is on heavy industry, similar to Germany, supporting G's assertion that more backward economies adopt newest technologies and industries.
 - Because of high corruption, extreme scarcity of capital and lack of trust within nation, Government plays the same role in pushing forward industrialization that big banks played in central Europe. Another illustration of different institutional devices to develop.

2. †Kevin H. O'Rourke, "The European Grain Invasion, 1870-1913," *Journal of Economic History*, 57: 775-801 (December 1997). www.jstor.org
 - Temin not a big fan of CGE models (tells more about model than economy).
 - European claims to the New World raised the endowment of land per European capita six-fold. This had long-run implications for European living-standards and income distributions→land rents fall→relative benefit to labor and capital→disaster for European landowners
 - Article focuses on effects of cheap grain on European wages, profits, rents, etc. and the political-economic response.
 - Cheap grain→less demand for domestic grain→agricultural wages fall→labor migrates to cities→industry expands and nominal wages fall.
 - Distribution: capitalists gain unambiguously from falling wages, landlords lose, effect on labor is ambiguous because wages fall but so too does the price of food. Should benefit workers in more industrial countries (like Britain) and hurt those in the more agricultural (like France).
 - Facts: price gaps narrowed from 1870-1913 (from 54% to nothing for wheat, U.S. to Britain) largely due to declining transportation costs. Tariffs kept some spreads (U.S. to France). From 1870 to 1913, real cereal prices fell by 35% in Britain and 20% in the tariff countries such as France, Germany and Sweden.
 - Computes two-sector CGE model to predict impact of different policies as well as a regression model to estimate the LR elasticity of land prices with respect to wheat prices.
 - Differences may explain varying trade policies
 - In Britain, which was more industrialized, cheap grain meant higher urban real wages because of lower cost of living, although land rents did decline.
 - In other countries where agriculture played a large role, land rents would have declined much more than they did in the absence of protection.
- C. Southern Europe (10/7)
1. †Helge Berger and Mark Spoerer, "Economic Crises and the European Revolutions of 1848," *Journal of Economic History*, 61: 293-326 (June 2001).
 - Economics misery and hunger led to the revolutions of 1848. While radical ideas undoubtedly shaped the form of the upheaval, they were not the proximate cause.
 - Point of paper is to explain why economic misery operated with a delay on the politics
 - Around 1850, poorer households still spend 2/3 to 3/4 of their budget on food→very sensitive to price changes. Possibilities for substitution limited because prices tended to move together.
 - Since nominal wages were fairly stable in the first half of the 19th century, nominal wage/grain price is a decent proxy for purchasing power.
 - Considers a grain price shock any movement greater than 2 standard deviations (only England and Sweden didn't have cost of living shock just prior to 1848). Definition depends on choice of confidence level, so some danger here.
 - But by 1848, agricultural prices were falling. How did this lead to delayed revolution?
 - Agricultural shock→wide spread drop in real income because agriculture is relatively large share of economy (if manufacturing was large, this shock could be positive to real incomes)→Shock reduced demand for industrial products and industrial investment→ Many businesses fail. Pain translated to the cities and we see, where data is available, industrial production shock.
 - It was the misfortunes of urban residents, not that of rural residents, that led to the revolutions. The 1848 revolutions happened at an unusual historical moment when the mfg sector was not too small but food spending was still big enough.
 - Shows that agriculture shocks Granger cause manufacturing declines. There's limited data (7 observations) to test industrial shocks causing revolution, but the correlation is perfect.

- Form of “revolution” (violent or peaceful regime change) depended on whether or not the existing political regime was oppressive.
 - Weaknesses of paper are fault of data, not how they used it.
2. †Robert D. Putnam, *Making Democracy Work: Civic Traditions in Modern Italy* (Princeton: Princeton University Press, 1993), Chapter 5, pp. 121-62.
- Differences between north and south of Italy are substantial and best explained by historical differences starting in the 12th century
 - Different institutions (South: authoritarian, North: republican) persisted to modern times making north more ready to capitalize on industrialization of 19th century
 - In 12th century, south was relatively advanced but fell under authoritarian rule of Norman kingdom. North saw flourishing self-government.
 - By 17th century, northern states ceased to be republican and, in many cases, independent, but the heritage of communal republicanism was transmitted in form of civic involvement, social responsibility, and mutual assistance among social equals.
 - Italy politically reunified in 1870. New charitable and educational associations, as well as numerous mutual aid societies and cooperatives were founded.
 - Such societies were widespread in the north but rare in the south. Mafia grew in the south in response to the absence of credible state enforcement of laws and contracts and the “ancient culture of mistrust.”
 - Quantitative measures of the durability of civic traditions, such as membership in mutual aid societies, are presented
 - High degree of durability of civic traditions.
 - strong correlation between civic traditions early in 20th century → institutional performance and socioeconomic development in the 1970s. Doesn't find that development in 1900s Granger causes institutions in the 1970s and 80s.
 - In fact, economic development in the 1980s is better predicted by civic institutions in the 1900s than by economic development in the 1900s
 - Problem: civic index is constructed by many parameters, but econ index consists only one parameter – labor force in mfg industries.
3. Francesco L. Galassi, “Measuring Social Capital: Culture as an Explanation of Italy's Economic Dualism,” *European Review of Economic History*, 5: 29-59 (April 2001).
- Focuses on Italian credit cooperatives
 - Shows that don't need social capital to explain differences in prevalence of cooperative banking between north and south.
 - Theoretical model of the threshold of expected repayment rates necessary to join cooperative.
 - More variability in investment outcomes in the south could (“could” not “does”) explain differences in social institutions without appealing to cultural baggage of distrust (riskier agriculture in the south meant that a southerner would have had to trust MORE of the other members than a northerner, so even with equal levels of social capital there would have been fewer coops in the south).

D. Latin America (10/9)

1. Stanley L. Engerman and Kenneth L. Sokoloff, “Factor Endowments, Institutions, and Differential Paths of Growth Among New World Economies: A View from Economic Historians of the United States,” in Stephen Haber (ed.), *How Latin America Fell Behind: Essays on the Economic History of Brazil and Mexico, 1800-1914* (Stanford: Stanford University Press, 1997), pp. 260-304.
- Factor endowments → Institutions → Development Outcomes
- Factor endowments had a profound and lasting influence on institutional structure
 - Certain resources: climate & soil suited to sugar, coffee, tobacco, cotton, etc or mineral resources led to extractive institutions (large plantations employing slave labor or concentrated landholdings with poorly compensated mine labor because of increasing returns to scale).

- Grain producing areas attracted higher proportion of European indentured servants rather than African slaves because of constant returns to scale. Had more equal distribution of income and human capital → more participatory institutions → market economies
 - Divide Americas up into three categories: Sugar Islands, Spanish America, and Temperate Regions.
 - Problem: if we allow that islands are unusual, there are no off-diagonal elements. Resource rich areas are Spanish or Portuguese and Catholic. Also, what explains difference between a country such as Argentina, that has a similar climate to Canada, and Canada? Classification implicitly moves beyond geography.
 - Early industrial productivity growth came from productivity increases not (dramatic) capital investment
 - Innovation, as evidenced by patent records, came from all levels of U.S. society. Relatively equal wealth distribution was important. Also meant people had disposable income to buy new manufactures.
2. †Zephyr L. Frank, "Exports and Inequality: Evidence from the Brazilian Frontier, 1870-1937," *Journal of Economic History*, 61: 37-58 (March 2001).
- Tests dependency theory argument that reliance on exports and foreign investment as sources of economic development in Latin America led to increase in inequality.
 - Uses data from Mato Grosso, a frontier state in western Brazil, to show that exports and foreign investment contributed much less to inequality than is claimed by dependency theorists, and they probably contributed to economic growth.
 - Looks at wage ratios between skilled and unskilled workers as proxy for income distribution (state treasurer vs. his receptionist, a rural school teacher, etc.) In all cases, pay ratios are stable and do not indicate that export-led growth raised inequality
 - Wealth distribution is expected to be more unequal than income. Gets data from probate records (this is a problem there might be selection bias here) and constructs Gini coefficient to show that while the area was very unequal (Gini=0.76-0.78) inequality didn't increase during export led growth and many of the fortunes were made in industries closely related to foreign trade.
 - Also did not find that foreign ownership of land was not necessarily associated with outward orientation and that, although foreign ownership could increase land inequality, it was not a driving force behind this inequality.
 - Conclusion: there's not a tradeoff between growth and inequality. (A bit strong for a case study, no?)
3. †Gerardo della Paolera and Alan M. Taylor, *Straining at the Anchor: The Argentine Currency Board and the Search for Macroeconomic Stability, 1880-1935* (Chicago: University of Chicago Press, 2001), Chapter 3, pp. 67-79.
- Obstfeld and Taylor's Impossible Trilemma: Cannot simultaneously have
 - A fixed exchange rate
 - Open capital markets
 - An independent monetary policy
 - In 1890, a financial crisis that started in Argentina spread to England and the rest of the world.
 - Only a quick intervention by the Bank of England saved Baring Brothers, the world's largest merchant bank, from collapse and dampened the effect on the British economy.
 - Started as typical banking crisis. Money stock in Argentina reduced through three channels: (1) public increased currency-money ratio (threat of bank weakness), (2) banks increased their reserve-deposit ratio, and (3) some financial institutions liquidated.
 - Two banks who lent primarily to the government, had particularly low cash-deposit ratio
 - Failure to fully float a loan to Argentina was interpreted as a signal that foreign capital, an important source of Argentine growth, was drying up. Banks get into trouble.

Government intervenes with liquidity expansion → inflation → default on banks' foreign debt.

- Similar to modern emerging market crisis: (1) global capital markets were well integrated and the affected country was open to them, (2) there was a long and ultimately unsuccessful intervention to restore a currency peg, (3) the major channel through which the crisis developed was through banks borrowing short-term loans in hard currency and lending long-term in local currency.
- What made this a crisis: government tried to commit simultaneously to a fixed exchange rate and act as a lender-of-last-resort in an open economy.
- Fiscal policy failed because the poor had nothing to be taxed on and the rich had enough political power not to be taxed. -> institutional problem?
- You can't beat the trilemma.
- Macroeconomic reforms did not tackle underlying microeconomic issues (such as poor bank regulation) that increased the risk for another crisis.

E. Russia (10/16)

0. Hypotheses on why USSR turned away from quasi-capitalism: (1) Uniqueness of Russia (Lenin and Gerschenkron), (2) World War, or (3) bad policies of Bolsheviks.
1. †Paul R. Gregory, *Before Command: An Economic History of Russia from Emancipation to the First Five-Year Plan* (Princeton: Princeton University Press, 1994), Chapters 2, 3, pp. 14-54.
 - Looks at Russian economy from emancipation of the serfs in 1861 to the eve of World War I in 1913. How did Russian economic growth compare to that of the then industrialized countries? Did the structural pattern of growth differ greatly? Was there an agrarian crisis that led to the Russian revolution?
 - Gregory warns that the data used to estimate growth and economic structure are of poor quality (data appendix not part of reading packet).
 - Some facts:
 - Russia in 1861: emancipated serfs; no railroads; leading grain producer but per capita amounts lag behind France, Germany and the U.S.; economy as a whole is stagnant until 1880; no industry to speak of; high pressure demographic environment
 - West in 1861: unprecedented affluence; already shifted from agrarian to industrial production; low pressure demographic environment
 - Russia in 1913: 4th or 5th largest industrial production, half that of U.S.; population has growth by 2.35x since 1861, largest in the world and 2x the United States; largest railroad in Europe; largest debtor in world; dominant European grain provider and second only to U.S. in total production; high poverty rates; developed commodity markets; relative strengths in agriculture and textiles; infant mortality still near 250 per 1000
 - Question 1: Comparing growth rates
 - Estimates growth rate for entire period (breaking into high and low growth periods adds little to analysis)
 - Conclusion: Russian per capita growth over period was approximately 85% of Western European average. Gregory believes that this refutes common belief that Tsarist economy was a failure.
 - Overall economy grew at 3% per year, greater than did Western Europe, so that by 1913 Russian output was the 4th or 5th largest in the world. But much of this growth came from population increase.
 - Per capital grew at 1.65%, about 85% of average.
 - Russia doesn't compare well on infant mortality: relatively high in 1861 at 250 per 1000, though some countries still close. By 1913, everyone else had seen significant declines, but Russia made no progress.
 - Question #2: Was Russia's pattern of structural change significantly different from that of Europe

- Russia began its rapid growth period later (1880) and with relatively high share of national product in agriculture
 - Finds that shift to manufacturing is smaller than in other developing economies, but not significantly so.
 - Productivity increases in industry and agriculture were comparable (the former was 4/3 the latter), in contrast to the view held by Lenin and Gerschenkron that Russia was agriculturally backwards but industrially advanced on the eve of revolution.
 - Follows a more “Asian” development model: relatively high investment rates given low levels of per capita income, but public investment was small (unlike that of Asian countries) and spending focused on military and administrative needs rather than human capital.
 - Old Russian Finance Ministry data suggest income distribution similar to that of West, but Gregory doesn’t trust the data.
 - Aside: labor inflexibility
 - To emancipate the serfs, tsar bought out landowners with a government bond financed with a tax on the village unit (*mir*), paid regardless on who actually resided in the town.
 - This system tied land to the countryside
 - Gregory: there must have been side payments because people did migrate to cities
 - Question #3: Was there an agrarian crisis?
 - Lenin, Gerschenkron and others say yes.
 - Gerschenkron: Communal system tied peasants to land, discouraged productivity improvements through strip farming and communal ownership, and had poor governance structure. Evidence of crisis was rural poverty.
 - Gregory: No agrarian crisis because agricultural output per capita increased substantially from 1880-1905. Exports of agricultural products were not “poverty exports”. Also, higher rural grain consumption and higher rural real wages. no. [wouldn’t hurt to flesh this out]
2. †Simon Johnson and Peter Temin, “The Macroeconomics of NEP,” *Economic History Review*, 46: 750-767 (November 1993). www.jstor.org
- Why did NEP fail? The traditional answer: malfunctioning of the grain market; kulaks sabotaged the system. Johnson and Temin believe that macroeconomics factors can explain collapse.
 - Some history: NEP (New Economic Policy) adopted by Lenin in 1921 as response to repeated peasant rebellions: market transactions were legalized, which helped stabilize the social situation. Bolsheviks restricted their intervention in the economy to holding “commanding heights”, heavy industry, railways, and the financial system. Yes, there was a controversy between this practice and declared ideology. Stalin abandoned NEP in 1928.
 - Temin and Johnson use data from finance ministry bulletin, which had relative editorial freedom and attracted best young economists of the day.
 - Scissors crisis: high inflation, no price controls. Price of manufacturers relative to agricultural goods rises sharply. Decline in terms of trade curtails food output → Bolsheviks think markets aren’t good for peasants. **Most critical mistake: Price controls** on wholesale and selected (e.g., salt, sugar, paraffin) retail prices, wanted to make sure peasants benefited from NEP and Bolshevik’s didn’t trust market.
 - Price controls caused losses at SOEs; funds to SOEs through loans and discounts increased substantially. These were financed by seignorage, so money supply increased.
 - Interpreted price rise after monetary expansion as evidence of speculation not effect of wholesale price controls. As a result, nationalized distribution.
 - In October 1927, peasants withholding output since couldn’t buy anything. Stalin used as an excuse to “administrative means.”

- Tried to grow economy with monetary expansion → couldn't raise prices because of price controls on industrial goods designed to benefit peasants → shortages of these goods, worst where prices most effectively controlled. Most goods not even available in countryside → private prices increase → peasants worse off because effective terms of trade worsened

F. Japan and China (10/21)

0. Perry goes into Japan in 1853-54. Interesting tidbit: when Japan had firearms when it invaded Korea in early 1600s, but when Perry arrived there were no guns left.
1. †David Flath, *The Japanese Economy* (Oxford: Oxford University Press, 2000), Chapter 2, pp. 21-42.
 - Tokugawa shogunate, which ruled Japan from 1603 to 1868, ended civil wars that had long ravaged nation
 - Tokugawa, though in theory administering on behalf of the emperor, reserved for himself the right to establish foreign policy, issue currency, establish national standards of measurement, and to remove other daimyo, local rulers sovereign in own domain.
 - Imposed far reaching controls
 - Caste system
 - Restricted mobility and therefore exploitation of comparative advantage in different trades.
 - Delayed marriage because of increased incentive to accumulate assets.
 - Forced alternate attendance in Edo, basically a hostage system, turns Edo into a major consumption center and Osaka into a commercial center with rice banks approximating fractional reserve banking.
 - Group responsibility tax system based on rice output, hindered private ownership
 - Seclusion: only Dutch and Chinese traders allowed in order to prevent alliances between other European countries and daimyo, suppress Christianity, and preserve quasi-monopoly on imports.
 - Gradually eliminated gun production to increase gov't monopoly on violence.
 - Because of forced isolation, never saw benefits of British industrial revolution
 - Treaty with U.S. and other western powers leads to depreciation of currency, inflation, political crisis and ultimately revolution.
 - Meiji Restoration begins in 1868: Tokugawa system replaced with forward-looking reformers.
 - Free trade and migration permitted
 - Taxes remitted to government in Tokyo, not through samurai
 - New currency, the yen
 - Monetary land tax and assurances of private land ownership
 - Caste system abolished → samurai rebellion and Satsuma war
 - Matsukata financial reforms:
 - Full convertibility of currency.
 - Establishment of central bank in 1882 to better control money supply.
 - By turn of 20th century, commercial banks and joint-stock companies are common. Private manufacturing, especially cotton spinning and silk-reeling, has begun to displace agriculture. Opening to foreign technology.
 - Forces opening of Korean ports in 1876. Sino-Japanese War in 1894-95, China capitulates. Russo-Japanese War in 1904: Japan prevails and both sides accept intermediation of Teddy Roosevelt in 1906.
 - Japan fits Gerschenkron's framework only if we regard it as one of the less backward nations at the time of its first industrialization. Growth in manufacturing was steady but not dramatic. Factory labor was relatively abundant, so industry was mainly "light" with efficient methods substituting labor for capital, rather than the reverse. Industrialization involved little government direction and only limited intermediation by banks. Meiji era characterized by laissez-faire; more similar to England and France than to Russia or Italy.

- However (Temin argued), there was nearly a four fold increase in growth during industrialization (1885-98), signaling that there was in fact a fairly dramatic period of growth, and that it came through textiles as opposed to heavy industry works against the G thesis.
2. †Susan B. Hanley, *Everyday Things in Premodern Japan* (Berkeley: University of California Press, 1997), Chap. 8, pp. 176-98.
- Reexamines widespread view that Japanese life remained largely unchanged during Tokugawa period (from early 17th through late 19th century) and therefore Japan's late industrialization occurred from a "backward" society that did not meet the preconditions encountered in the West. In fact, living standards increased during Tokugawa era so that more and more commoners could enjoy samurai-level consumption.
 - Hanley believe impression of Japan's backwardness are biased by visibility of Western technological changes versus the difficulty of discerning levels of physical well-being, which were relatively high in Japan.
 - "Data" based on travelers' diaries.
 - Gist: Western technological advances in communication and transportation etc. did little to improve health and well-being of most people. In fact, content of diet, crowding and unsanitary living conditions, and urban pollution brought on by industrialization worsened with industrialization. Japan had high life-expectancy, sanitation, school attendance.
 - Japanese advances explained both by culture and by social organization.
 - Backwardness at time of Meiji Restoration impediment to industrialization. Government encouraged private savings and invested revenues in infrastructure rather than consumption. As a result, very fast industrialization. Electricity in 1887, only five years after the world's first public power station opened in New York. Could ignore, for a time, social infrastructure such as sanitation and waste disposal, because investments from Tokugawa era still in place.
 - Conclusion: during Tokugawa era, level of physical well-being improved. This improvement was maintained after Restoration due to social organization. Even though Japan did not have institutions and technology associated with preparedness for industrialization in the West, it was not "backwards." It had levels of wealth and education and productive agriculture and traditional industries necessary to support industrialization.
3. †Philip Richardson, *Economic Change in China, c. 1800-1950* (Cambridge: Cambridge University Press, 1999), Chapters 2, 4, 7, pp. 16-24, 40-53, 84-97.
- A whole bunch of facts about China
 - Output growth: 18th century China experienced considerable economics growth while maintaining social stability. Population grew by 40% without apparent declines in per capita income. Westward migration & new crops. Agricultural expansion exceeded population growth. Government assisted expansion with tax incentives to migrants, financing public works programs, provided military and political security.
 - Trade: Most trade still within regions, there was growth in interregional and international trade with other Asian nations. Trade legalized in 1684. Legalization of trade→more cash crops.
 - Money: copper for local trades. Silver for regional, national, or international. Money supply increased with output from copper mines and trade surplus.
 - Problems: no sign of commercial or industrial capitalism. No transition from workshops to factories. No technological innovation. Financial markets did not promote accumulation. Trade didn't give rise to merchant class. As reached Malthusian boundaries, China remained agrarian and Confucian.
 - Population growth: population continued to grow even as agricultural output peaked. Peripheral areas could no longer sustain large immigration→tensions between immigrants and indigenous minorities and worsening of ecological conditions.

- Economic deterioration: Between 1820 and 1850, money supply contracted and prices fell 40%. One-quarter to one-half of silver inflow lost to opium imports. Copper depreciation pressured farmers, who were paid in copper, to produce more fulfill tax obligations, which were paid in silver.
- Political instability: budget surplus exhausted by rebellions, unable to finance public works, tensions of population growth, corruption.
- Conclusion to Chapter 3: **population growth was an impetus for both economic growth and decline**. Rulers thought China was going through familiar internal problem and wanted to deal with it through traditional means, but could not pursue ends in isolation. Needed new response to confront rapidly industrializing West.
- Increased trade: The first Opium War (in 1830s) ended ban on opium, increased number of tradable commodities, widened number of legal entry points, and partially deregulated trade. Treaty of Nanking gave foreigners rights of residence and set 5% import duty ceiling.
- “Commercial Revolution”: Complexity of Chinese market and dynamism of Chinese commercial sector forced western merchants to employ Chinese intermediaries. By 1860s, the intermediaries began to adopt western practices and this quickened the pace of commercial innovation. Trade increased 20-fold from 1833 to 1913. Imports: still opium but diversified into cotton, metals, petroleum, machinery and chemicals. Exported silk, tea, and bean products.
- Maintained positive trade balance, with patters similar to advanced economy, until 1890s when deficit grew in manufactured goods.
- Prices: Remained on silver standard until 1930s→long term price depreciation
- Effects of Depression: drying up of foreign markets for silk and bean products.
- Was there a dual economy, a trading enclave on the coast with no effect on country? Similarity of rice prices throughout country suggests not.
- The State’s role: by the mid-1800s, factions of reformers sought to restore the power of the state: increase revenue, build a western military, increase public works. Failed due to “ideological constraints”, financing difficulties, and rampant corruption. Regionalism rose. China’s lack of modernization evident in defeat in Sino-Japanese war in 1894.
- Qing Dynasty ended in 1911→republican government of Sun-Yat Sen. Perhaps just bad luck of the timing, but strong republic did not emerge. China disintegrated into political instability. Fight between Nationalists and Communists ensues. Japan annexes Manchuria.

3. THE UNITED STATES

A. Labor and Capital in the North (10/23)

1. †Claudia Goldin and Kenneth Sokoloff, “Women, Children, and Industrialization in the Early Republic: Evidence from the Manufacturing Census,” *Journal of Economic History*, 42: 741-74 (December 1982). www.jstor.org
 - “the rapid growth of the manufacturing sector was associated with a disproportionate increase in the demand for women and children as workers, because the spread of new large-scale methods of production greatly facilitated the substitution of unskilled for skilled labor”
 - Temin: Refutes Habbakuk hypothesis that expensive male labor led to increased capital intensity; in fact, may have led to substitution of cheaper female labor. Basic argument: abundant land in the north → higher reservation wage for men → need for labor saving devices/methods → large factories (division of labor by skill); these factories were better suited for the employment of women and children, i.e. their labor could be productively used in factories → increased demand for women and children labor
 - Using U.S. data from Census of Manufacturers and McLane report (another manufacturing survey) find that women and children grow from 10% of northeastern

- labor force in early 1800s to 40% in 1832. This declines thereafter, but remains above 30% in 1850.
- Why the increase?
 - Women's marginal product in agriculture in the north lower than in the south, so lower wages for women relative to men in N.
 - Temin finds this unconvincing; behavioral argument about accumulating dowry as factory girl in N and house servant in S.
 - Employment of women and children was associated with the production process in large firms (women represented over 50% in many large firms) in a range of industries
 - Through industrial development, the wages of boys and women increased relative to those of men.
 - Productivity ratios improved due to industrialization
 - Increase in demand for female and child labor drove increased use of women and children.
 - Females in the south prior to industrialization had relatively higher wages than those in the North. Goldin and Sokoloff claim this is due to different physical requirements in local agriculture.
 - Test compensating differential hypothesis, that higher wage rates for women & children reflect bad working conditions. Don't find support for this.
 - Massachusetts had particularly high female labor force participation. Was this due to migration or different behavior of Mass. natives? Data suggest that migration didn't play a major role before 1830, by which point Massachusetts already had high participation.
 - Decline in female labor force proportion after 1850 is probably due to increasing shift in men from agriculture to manufacturing, and perhaps due to a slowdown in female-intensive industries (most notably textiles).
2. †Richard Sylla, "U.S. Securities Markets and the Banking System, 1790-1840," *Federal Reserve Bank of St. Louis Review*, 80 (3): 83-98 (May-June 1998).
- A "world class" financial system emerged at the very beginning of American history providing a strong background for the country's growth. There was mutual support between the banking system and the securities market.
 - The existence of a securities market led to distinctive features in the U.S. banking system, which led to distinctive features in the U.S. money and securities markets.
 - Different forms of financial organization
 - American/Anglo has a functional division between three sectors: banking, money, and securities.
 - Continental/German system: banking dominates with money & securities relegated to secondary roles.
 - Securities markets have not attracted much attention from economic historians, in part because the data aren't as easy to get because the government was less involved.
 - Before 1788, U.S. financial system: isolated banks, no banking system, states incurred debts, printed bills of credit or fiat money.
 - After 1788, Constitution laid groundwork for financial system reform. States could no longer print money. Treasury Secretary Alexander Hamilton's key reforms:
 - Restructured national and state debts, paying interest in hard currency. Federal Gov't assumed state debts instead of writing them off, strengthening U.S. credit with investors. U.S. helps finance debt through custom duties and tariffs.
 - Established Bank of United States. Federal debt supported bank and vice versa.
 - Established mint
 - All together these reforms boosted credit and attracted investors, promoted development of a banking system.
 - An active trading market for federal securities emerged in New York, Boston and Philadelphia. Securities prices in these markets reported in local newspapers.
 - Sylla analyzes end-of-month price data for U.S. debt securities from 1790-1830.

- Pricing efficiency
 - Could effectively price more complicated securities
 - Attracted overseas investors—over 3/5 of investors foreign—thus transferring capital to U.S.
 - Debt of U.S. was priced comparably to “established” British government debt.
 - Banks benefited from the securities market
 - Able to source capital. Became largest component of U.S. stock market
 - Ease of raising capital: by 1800 the U.S. had nearly one-half the banking capital of England and Wales in 1800; by 1825 it had 2.4x the amount of England and Wales.
 - States chartered more and more banks, encouraged by the ease of raising capital in the securities market. States could invest in banks but this leads to dilemma: state may want fewer banks to limit competition and thus improve profits. In 1863, a reform measure was enacted to reduce corruption by eliminating the legislative chartering of banks. Some New England states began taxing bank capital rather than investing in banks as early as 1812.
 - Conclusion: an argument can be made that U.S. growth was finance-led. The emergence of a securities market around 1790 coincided with the acceleration of US economic growth. Sylla argues that this is because factories, canals, railroads, etc. relied on modern financing methods.
 - Temin’s criticism: if you’re going to make this statement, you should see if the textile firms that led U.S. industrialization got any of their capital from securities markets.
3. †Charles W. Calomiris, “Is Deposit Insurance Necessary?” *Journal of Economic History*, 50: 283-95 (June 1990). www.jstor.org
- Why are U.S. banks so unstable?
 - Calomiris contrasts banking insurance with their alternative in U.S. history, branch banks, as schemes for protecting payments. He concludes that deposit insurance was NOT necessary.
 - Failures in New York, Vermont and Michigan. Common features: fraud; poor and ineffectual government supervision allowed large risk takers to free ride on other banks, moral hazard (excessive risk taking because of government backing) and adverse selection (sound banks retreated from insurance)
 - Successes in Indiana, Ohio, and Iowa: largely self-regulating, aligned incentives and authority to regulate, and made insurance protection credible through unlimited mutual liability among banks [need to check article to understand with all of this actually means].
 - In early 20th century, number of incurred banks increases dramatically, compounding earlier failures. Supervisory authority with government, not member banks, and often use was politically motivated. Compulsory insurance banks grew quickly in the halcyon days for agriculture, 1914 to 1920, but when agricultural prices fell, they had higher failure rates than the uninsured, larger asset shortfalls, and greater delays in liquidating insolvent banks.
 - Banks in states that allowed branch banking recorded lower failure rates and responded better to external shocks (e.g., agricultural crisis) by consolidating banks and expanding branches.
 - Conclusion: unlimited branch banking and privately administered insurance programs (such as those used in antebellum Indiana, Ohio, and Iowa) would have been adequate to protect payment system from shocks. Unit banking and ill-conceived government-controlled insurance were the greatest threats to system stability. These problems are likely even more pronounced under today’s federal insurance program

B. The South and Slavery (10/28)

1. †Robert W. Fogel, *Without Consent or Contract* (New York: Norton, 1989), Chapter 3, pp. 60-80.
Presents Several economic issues regarding U.S. slave market

- Profitability and prospects of the slave market in the British West Indies and the U.S.
 - W. Indian slaveholders generally received a higher rate of return on their investment (as high as 50% per year in Barbados in the 1650s). Average rate was about 10%.
 - In the U.S., hard to measure underlying return to slavery because it is obscured the disruptive effects of American Revolution and the cyclical misfortunes of rice and tobacco markets.
 - Prices of slaves shifted according to fluctuations in commodities they were used to produce, but demand for slaves never declined for sustained periods.
 - In the western cotton states, demand for slaves didn't turn down even during depression decades; from 1810 to 1860 demand in the West increased twenty-fold.
 - Demand outpaced natural population growth, and price of slaves doubled between mid-1840s and Civil War. Fogel argues this reflected "the high level of immediate profits and bounding optimism of the slave owners regarding future prospect."
- Slave supply
 - Fogel argues that slaveholders' responsiveness to commodity price fluctuations, particularly cotton, shows that the slave market was a "flexible and highly developed form of capitalism." South had many devices for gathering and distributing economic intelligence (crop prices, etc.).
 - Increasing cotton demand induced the movement of 835,000 slaves to the western cotton states between 1790 and 1860. Main exporting states: Maryland, Virginia, and the Carolinas. Main importers: Alabama, Mississippi, Louisiana, and Texas.
 - This westward shift of slave populations was facilitated by transportation breakthroughs, particularly the steamboat and railroad.
 - No one agrees on whether slaves were traded westward or moved out with their owners. Estimates of those traded range from 16% to 60%.
 - Price of slaves varied systematically by age, gender, health, skills and reliability. Data is collected from probate records and slave sale invoices.
- Relative efficiency of slave labor
 - Compares efficiency of slave labor to that of free labor
 - Since relative to free labor, slave labor included more women, children, elderly and disabled, the unit of labor efficiency measurement is the "equivalent prime hand." For example, three boys in late teens are considered the equivalent to two prime-aged males.
 - Average output for equivalent prime hand was higher for slave plantations than for free laborers, but this measure is biased. Slave plantations tended to have better soils and more capital than free plantations. Accounting for these differences, Fogel concludes that slave labor still more efficient than free labor on large plantations.
 - Large plantations were also more efficient than small ones, regardless of the type of labor, due, Fogel claims, to use of the gang system (requires scale of large plantation), labor specialization, and a higher degree of regimentation
 - There's also significant regional variation. Highest level of efficiency among most classes of farms in states with bulk of interstate slave traffic. Average farm productivity in the South is 35% higher than in the North. Free farms actually less productive in South, so Fogel attributes 90% of technical advantage to slavery.
- The "Paradoxes"
 - Slaves worked an average of 2,800 per year, about 10% less than free northern farmers.
 - Fogel argues that mix of crops, livestock, and growing season determined the length of workday and that slave were exploited through intensity of work in the "gang system."
 - Fogel finds that slave wages were 15% higher than free farmers' wages, but their "equal-efficiency" wage was 33% lower.

- Intensity of work was characteristic of gang system. This system of forced work, and not inherent superiority of slave workers, accounts for productivity differences in Fogel's view.
- 2. †Richard H. Steckel, "A Peculiar Population: The Nutrition, Health, and Mortality of American Slaves from Childhood to Maturity," *Journal of Economic History* 46: 721-41 (1986). www.jstor.org
 - Steckel claims that although slave children were not well nourished, the adults were.
 - Looks at data from: slave ships (with some approximations), mortality rates from plantation records, and compares to growth curves for other in 18th and 19th century and underdeveloped 20th century populations.
 - Slave children were much shorter than modern children, at age 4½ boys and girls were only at the 0.2 and 0.5 percentile, respectively. But there is sustained catch-up (more so for U.S. rather than Caribbean slaves), reaching 27.1 percentile and 28.4 percentile for adult males and females (problem: not following a given slave throughout life)
 - While young slave children appear worse off than children in the poorest of developing countries today, adults fare much better. Adult slaves were actually taller than 18th and 19th century free laborers.
 - Why malnourish children but nourish adult slaves:
 - less breast feeding so mother can work
 - saved money by feeding children vegetarian diets
 - children did not produce enough to cover costs (additional benefit to meat not worth cost, although Steckel's model overlooks mortality effect of diet)
 - malnourished children grow to be more docile adults
 - The implications of malnourishment of children on intellectual development may have affected the post-Civil War experience of blacks.
- C. The Aftermath of Slavery (10/30)
 1. †Lee J. Alston and Joseph P. Ferrie, "Paternalism in Agricultural Labor Contracts in the U.S. South: Implications for the Growth of the Welfare States," *American Economic Review*, 83: 852-76 (September 1993). www.jstor.org
 - Paternalism is an "implicit contract whereby workers exchange dependable (long term commitment) labor services for a variety of goods and services." These goods and services include housing, interceding in commercial transactions, medical care, judicial issues, and, most importantly, protection from violence (although this last point sounds a lot like a protection racket).
 - Period of paternalism lasted from late 19th century (note that it did not start immediately after the Civil War) until the 1960s (passage of the Civil Rights Acts).
 - After Civil War, end of slavery created labor shortage in South. Government attempts to stabilize labor markets did not create labor market with the Freedman's Bureau writing long-term contracts was initially successful, but after a few years planters and freedmen tried to circumvent the Bureau because its contracts were too restrictive. succeed; neither employers nor employees fulfilled labor contracts.
 - Alston and Ferrie argue that in response to these labor shortages, some planters chose to be honest, provide housing, protection, etc. in order to get "good and faithful" labor. System allowed them to tie black workers to land. Main benefits:
 - Reduce cost of monitoring labor effort
 - Discourage labor turnover, which was important due to farm-specific knowledge
 - May have encouraged productivity improvements in land
 - Throughout period of paternalism, planters had an interest in maintaining racist state and preventing federal interference in race and labor issues, because threat of violence made the protection they offered more valuable. (note this points out that in the South, blacks lacked civil rights and Southern society tolerated violence against them).
 - Economics of paternalism: not only tied workers to land, but reduced monitoring costs (thorough long-term contracting).

- Politics of paternalism: in order to maintain paternalism, Southern rural elite needed to prevent federal interference. Governments substitutes for paternalism, such as welfare, would have raised monitoring costs and caused out-migration of labor (easier to move). Since southern politicians were very powerful, largely due to committee influence due to seniority, they were successful in blocking government changes.
 - With mechanization, economic incentives for paternalism wane. Alston and Ferrie would like to look at time-series of paternalism vs. mechanism, but don't have it. Argue the following:
 - Mechanization→decline in tenancy→decline in paternalism (because of its association with tenancy). Tenancy declined due to mechanization because:
 - Monitoring costs fall with standardized techniques
 - Labor demand softens (unemployment due to mechanization)
 - Farm-specific knowledge becomes less valuable→turnover less costly
 - Alston & Ferrie claim this link between mechanization and tenancy decline has been well established by other authors.
 - Perceptions by blacks of race relations. Mechanization→changes in race relations. As tenancy was replaced with wage labor, blacks' economic power and consequently their self-confidence increased and diminished deference to whites. These changes signaled erosion of paternalism.
 - Southern political power. Southern Congressmen retained a near "stranglehold" on committee power, yet the welfare state was allowed to expand. This wouldn't have happened if paternalism was still important to Southern business interests.
 - Welfare laws encouraged out-migration by alleviating poverty in Northern urban areas.
 - Finally, let's not forget that civil rights were coming to the South, whether white Southerners wanted them or not.
2. †Robert A. Margo, *Race and Schooling in the South, 1880-1950* (Chicago: University of Chicago Press, 1990), Chapter 3, pp. 33-51.
- Relative black-to-white per pupil expenditures in Southern public schools followed a U-shaped pattern after the Civil War: relative equality following the war, increasing inequality starting around the turn of the century, trend toward equalization starting in the 1940s (only as result of concerted legal effort).
 - This initial deterioration of the relative quality of black schools was a consequence of the widespread disenfranchisement of blacks and the growth in demand for better white schools.
 - Disenfranchisement
 - During Reconstruction, blacks had some political power in the South under Republican governments that were maintained by a federal military presence. Blacks elected to public office→significant increases in public funding including schools for black children
 - Reconstruction governments replaced by Redeemers, southern Democrats trying to restore supremacy of white elite. They controlled state government and thus distribution of funding to the local level.
 - Through a combination of intimidation, violence, fraud and legal suffrage restrictions, the influence of black voters was reduced. Legal restrictions included making voting conditional on literacy, property ownership, residency (hurt migrant farm laborers), and payment of a poll tax. Grandfather clauses for ex-Confederates.
 - White turnout fell 26% (these laws hurt poor whites too). Black voter turnout fell 62%.
 - Rising demand for better white schools
 - Margo doesn't really explain why demand for better schools developed
 - Does allude to a little tax revolt: equal quality of schools chaffed at middle class whites who through their taxes were footing the bill.

- Some increases in expenditures on white pupils from school taxes, but much from a redistribution from blacks to whites.
- State funds allocated based on school age population, but local boards had considerable discretion in allocating funds. “We have twice as many colored children of school age as we have white, and we use their money. Colored children are mighty profitable to us”, a local school superintendent in Louisiana.
- Louisiana case study
 - Looks at Louisiana from 1880-1910 because only southern state to publish race-specific voter registration data
 - Redeemers (called the “Bourbons”) seized control of state school fund. Maintained control through electoral fraud—Margo gives some hazy details about the 1896 state elections, which, after some twists and turns, led to a law restricting suffrage.
 - Suffrage restrictions reduced black voter registration by 90%.
 - Margo regresses cross-sectional county level data:
Black/White Expenditure Ratio = $\alpha + \%Black - PerPupil\ Budget - PPB * \%BlackVoter$
 - Results “support” disenfranchisement (though in a pretty weak way statistically and with some data flaws)
 - Concludes: from 1896 to 1910, black share of registered voters declined by 49%. This accounted for 23% decrease in the black-white per pupil expenditure ratio (although statistical significance of result is questionable).
- Myrdal’s paradox: once blacks were disenfranchised, why spend anything at all on their schooling? From 1910-1940, spending on black schools grew with increased spending on whites; the ratio remained roughly constant. Possible explanations:
 - Despite racism, still some belief in the “American Creed”
 - Potential for court action required at least a nod in the direction of “separate but equal” ruling from Supreme Court in Plessy-Ferguson (1896).
 - Philanthropic efforts for black schools
 - Bureaucracy that took over day-to-day management of black schools was more liberal than politicians
 - Potential economic benefits to whites from educated blacks in labor force → raised the return to white-owned capital (“better cooks, better servants, etc.”)
 - Mobility model: southern whites needed labor from blacks who would leave area if schooling for their children was too bad.
- Ultimately institutions and incentives weren’t enough to force equalization of expenditures. Took political weapons (the NAACP, the courts and particularly the *Brown v. Board of Education* ruling (1954), and public opinion) to shift things.
- 3. Heckman, James J. “The Central Role of the South in Accounting for the Economic Progress of Black Americans,” *American Economic Review*, 80: 242-246. (May 1990).
 - Wants to distinguish between long-term secular trends in migration and educational advancement versus the discontinuous effect of Civil Rights Acts in explaining black economic progress in the 20th century.
 - Disaggregated data (state-level data make this all possible) show that improvement in blacks’ economic status from 1940 to 1965 come from migration from the rural south to the north whereas after 1965 improvements were in the South, where the efforts on the CRAs were focused.
 - Conclusion: incorrect to attribute all black improvement in the South to civil rights laws. Upward trend began before 1964. Social activism in the South combined with schooling improvements and industrial development were important contributors (southern employers were “looking for an excuse” to hire blacks).
 - Temin thinks “results were too good”. Big change in 1965, but how could change happen so quickly. Heckman’s argument: it wasn’t enforcement of laws but their signaling effect that sparked rapid change jolted the South into a new equilibrium.

D. Labor Participation (11/4)

1. †Claudia Goldin, *Understanding the Gender Gap* (New York: Oxford University Press, 1990), Chaps. 4-5, pp. 83-158.

Wage Discrimination

- Women are paid less than men for the same work. When and how did this begin?
- Goldin looks at manufacturing sector from 1888 to 1907 and clerical sector in 1940
- Simple ratio of earnings is insufficient to establish failure of labor market to reward workers impartially because earnings formed into ratios may not hold enough factors constant
- Better way: compute dollar value of various characteristics in labor market, then computer how much women would receive if they were men, take ratio of actual earnings to this predicted earnings.
- “Wage discrimination” is not the same as “discrimination”. Two types of discrimination:
 - Taste discrimination: distaste for associating with another person because of some characteristic unrelated to intrinsic aspect of productivity
 - Statistical discrimination: groups have different average characteristics. If inability to discern individual characteristics, each individual may be assigned group mean.
- Around 1900, women in manufacturing: >75% women unmarried. Entered labor force around age 15 and worked until married, an average of 6 years. Such a short expected working lifetime can explain many differences in male and female jobs because it is the total expected job experience that matters for occupational choice.
- Using methods described above, Goldin finds 35% wage discrimination, but attributes some of this to shorter job ladder for women. Even in unskilled, menial work, men earned about 15% more than women. Taking this as lower bound for productivity differences, she concludes 20% wage discrimination.
- Clerical sector: sector shifted to heavily female from 1890 to 1930, hiring female workers, many straight out of high school. Mechanization reduced gender gap, but this gap widened with every year of experience. Goldin again attributes this to different career tracks; promotions widen earnings gap from 14% to 40%.
- Temin: Discrimination today takes form of lower wages rather than constraints on job types.

Labor force participation

- Labor force participation for *married* white women has increased continuously from 1890 to the present, but the big upturn started in the 1950s. From the 1950s, married women's participation grew by 10% per decade.
- Attributes change in labor supply to preference changes: the consciousness of the feminist movement, reduced number of children and hence family responsibilities, reduced time cost of producing household goods (food, cooking, clothing), income of other family members, and family assets [how do these last two work?].
- Demand side changes: sectoral changes (increases in clerical and sales forces), use of complementary capital, changes in technology increasing substitutability between male and female labor, formal education replacing on-the-job training, and the taste changes by employers and employees (reduced discrimination).
- Goldin solves general model of married women's labor supply. Fitting aggregate data, she finds that female labor supply was relatively stable from 1890 to 1980. Demand increase was responsible for most of increase in female labor supply, assuming that parameters (income elasticity, wage elasticity of supply, etc.) stable over time. But, data show these parameters were not stable. Looking at these changing parameters she finds:
 - From 1890 to 1930, supply was shifting rapidly outward → increased participation
 - From 1940 to 1960, demand shifted outward while supply actually shifted backwards
 - From 1960 to 1980, demand growth remained strong but supply also moved outward

- Finds the direct impact of World War II was small because most of the effect can be explained through the war's effect on fertility and on postwar increased demand for all workers.
 - White women's prediction of their labor force participation were similar to their mothers' actual experience. When young women underestimate their future labor market roles, they tend to underinvest in job training and schooling, which could later reveal itself in lower wages for women compared with men.
 - 2. †Dora Costa, "Pensions and Retirement: Evidence from Union Army Veterans," *Quarterly Journal of Economics*, 110: 297-320 (May 1995). www.jstor.org
 - During the 20th century, there has been an increase in retirement rates and a general decrease in the retirement age. This might be explained through income effects, changes in societal attitudes about retiring, increased demand for leisure, or a shift in production to factories and manufacturing (from agriculture?).
 - Costa uses the income effect of the Union Army pension program as a *nearly* exogenous increase in income to estimate the income effect on retirement (cannot test for effect of program like social security because everyone receives it and must be retired to receive it whereas only some received this pension regardless of labor force status).
 - Data from 712 men linked to 1900 census in Ohio and New York. After some effort to control for disabilities, prisoners of war, etc. and comparing to Confederate veterans, who did not have pensions, find that the **Union Army pensions had a large impact on retirement rates**→elasticity of labor force participation with respect to pension of 0.73.
 - Tests by comparing union veteran retirement rates to confederate veteran retirement rates, assuming similar incidence of disability (problematic). Finds that veteran status is not a significant predictor of retirement in the South, but it is in the North.
 - If this income elasticity persisted through the 20th century, increased income could explain 60% the increase in retirement rates in this century; however, there are good reasons to think this elasticity may have changed. In particular, as leisure grows more attractive due to a growing array of less expensive leisure goods, this elasticity must fall.
 - Changes in transfer policies alone may not induce large increases in labor force participation rates among the elderly.
- E. The Modern Corporation (11/6)
1. †Alfred D. Chandler, Jr., *Scale and Scope: The Dynamics of Industrial Capitalism* (Cambridge, MA: Harvard University Press, 1990), Chap. 2, pp. 14-46.
 - *Another Temin favorite* [quick editorial note: the article seems to me like a lot more spin than substance, so this summary might need some work]
 - Presents an explanation of the creation and continued growth of the "modern industrial enterprise"
 - What characterizes a "modern business enterprise" (MBE):
 - Contains a number of distinct operating units
 - Is managed by a hierarchy of full-time salaried executives
 - BIG
 - and Private
 - The modern industrial enterprise (MIE) is a sub-species of the MBE. It carries out modern production processes through a collection of operating units, each with its own specific facilities and personnel, whose combined resources and activities are coordinated, monitored, and allocated by a hierarchy of middle and top managers [the multiple unit requirement seems inappropriate to me. Lots of modern businesses don't have multiple facilities]
 - Why the MIE developed
 - (1) Needed to invest in production facilities large enough to capture the full potential of economies of scale and scope that technological advances (think railroad, Bessemer steel, oil refining, cigarettes, and sewing machines) brought.

- (2) Invest in product-specific marketing, distribution and purchasing networks. (Singer integrated forward to have spare parts and technical skill at point of sales & service.)
 - (3) Recruit and organize managers with capabilities to meet challenges of ever-changing technologies and markets
 - Competitive advantages of MIEs were far fewer in labor-intensive, rather than capital-intensive, industries. MIEs clustered in food, chemicals, petroleum, primary metals, and certain machinery groups. Relatively few in textiles, apparel, lumber, etc. Critical step in creating an MIE: constructing a plant of optimal size to exploit economies of scale. This optimal size varied from industry to industry
 - Why did the MIE appear suddenly in the last quarter of the 19th century:
 - In the 1880s and 1890s, new mass-production technologies, those of the Second Industrial Revolution, brought a sharp reduction in costs as plants reached minimum efficient scale
 - Not until the 1870s, with the completion of modern transportation and communication networks—the railroad, telegraph, steamship, and cable—and of organizational and technological innovations necessary to operate them as integrated systems could materials flow into a factory or processing plant and finished goods move out at a speed, volume and precise timing to achieve significant economies of scale. In short, the revolution of transportation and communication created the opportunities for a revolution in production and distribution.
 - Investment in product-specific marketing, distribution, and purchasing networks
 - Large volume manufacturers had economies of scale previously reserved to distributors
 - New products often required specialized skills or facilities for marketing or distribution (e.g., training people on sewing machines or refrigerating foodstuffs)
 - As scale produced natural oligopolies, manufacturers could no longer rely on intermediaries who made their profits handling the products of multiple manufacturers [why is this, exactly?]
 - Integrate in to purchasing because of need for specialized buying skills (more advanced inputs too), importance of coordinating flows, and volume discounts obviated need to pay a middleman.
 - How the MIE continued to grow [sort of a list of all the ways to grow, excluding only internal growth in own products]
 - Horizontal combination: acquiring others in similar markets
 - Vertical combination: backwards or forwards integration
 - Geographic expansion
 - Product diversification
 - [There's more stuff in the article about recruiting, first-mover advantages, and the MIE in labor-intensive industries that didn't seem to warrant summarizing]
2. †Elizabeth Granitz and Benjamin Klein, "Monopolization by "Raising Rivals' Costs": The Standard Oil Case," *Journal of Law and Economics*, 32: 1-47 (April 1996).
- Standard oil monopolized the petroleum industry during the 1870s by cartelizing petroleum transportation, the only stage of production where entry was difficult
 - In 1871, three railroads decide to enlist the cooperation of several oil refiners to enforce a collusive rail freight pricing agreement. Set up Southern Improvement Company, owned jointly by largest refiners in each of refining centers. Standard Oil was the SIC member in Cleveland.
 - Refiners allocate petroleum shipments so that each railroad earns a fixed, agreed-upon share of shipping market, thus railroad can't gain market share by cutting rates. In exchange, railroads would give deep discounts to these "eveners" [note: this seems to require consolidation of refining for this to matter, otherwise allocation shifts would be meaningless to railroads.]

- Crude oil producers were able to block formation of Southern Improvement Corporation.
 - Granitz & Klein observe that Rockefeller's acquisitions of his Cleveland competitors took place after SIC was set-up and before agreement was blocked. Offer evidence that Rockefeller was able to use the threat of the SIC agreement to buy rivals cheaply
 - Price discounts from railroads changed normal merger for monopoly scenario: sellers no longer had incentive to hold out for higher price due to potential for price squeeze (transportation was ~40% of kerosene export price)
 - So Standard rolls up Cleveland and then, in 1874, secretly merges with the largest refiners in Pittsburgh and Philadelphia, controlling 40% of U.S. refining capacity.
 - Eventually controlled 90% of refining capacity. Used capacity shifts to punish Pennsylvania Railroad during a rate war in 1876-77.
 - Standard had to move quickly into pipeline technology or risk losing its transportation monopoly
 - Discovery of new fields outside of Oil Regions, Texas in particular, weakened cartel
 - Conclude: vertical relationship between Standard and railroads required horizontal market power or collusion.
- F. The Gold Standard (11/11)
1. †Barry Eichengreen, *Globalizing Capital* (Princeton: Princeton University Press, 1996), Chapter 2, pp. 7-44.
 - What makes a Gold Standard
 - Country agrees to buy and sell gold at a fixed rate
 - Free flow of gold allowed
 - No international agency to support
 - Gold Standard required:
 - Priority to currency and exchange rate stability
 - Governments shielded from monetary policy pressures
 - Open and flexible markets
 - Silver was the dominant money from medieval times to 19th century. In 19th century, bimetallic systems became common.
 - Gold Standard as a basis for international monetary affairs emerged in 1870s. Only Britain on Gold Std. at beginning on 19th century.
 - Dilemma of bimetallism (using both silver and gold): fluctuations in relative process, caused largely by gold discoveries in California (1848) and Australia (1851) and silver discovery in Nevada (1859).
 - Lure of bimetallism. Eichengreen finds unsatisfactory all the explanations for why bimetallic standard persisted until the second half of the 19th century
 - Gold standard not feasible until advent of steam power. Smallest gold coin too valuable for quotidian purchases. Tokens too easily counterfeited until steam press. But steam was available in the 1820s. France installed a steam press in 1840s but remained bimetallic until 1870s [editorial: some things take time].
 - Politics: a vocal mining interest supported silver. Debtors fared better with inflation caused by discoveries of either metal. Eichengreen: but little evidence that farmers (generally debtors) were united against gold and this can't explain timing. [Editorial: except in U.S. but that's not Eichengreen's focus]
 - Eichengreen like Inertia argument which he describes as a bit of game theory: no one, particularly small countries, wanted to be the first to switch (network externalities). Common money facilitated international borrowing. Disadvantages of prevailing system had to be pronounced before switching.
 - Advent of Gold Standard
 - Britain on gold and world's largest industrial and commercial power
 - Portugal, a heavy trader with Britain, goes on gold in 1854
 - Silver block (Latin Monetary Union: Belgium, France, Italy, Switzerland) tried to form, but derailed by Franco-Prussian war

- Germany tips balance towards gold. Trading to the east used paper currency and British market to the west used gold. Moreover, Britain was the growth engine. Germany was selling silver for gold after war. With Germany as leading continental industrial power, it's shift tipped balance.
- Network externalities that delayed shift, kept system from switching back during deflation of 1870s and 1880s.
- Price Specie Flow Model (David Hume)
 - Background: Merchandise exported→exporter receives payment in gold→takes gold to domestic mint to have coined. Importers make payments in gold. The flow: **Trade deficit → Δ Gold → Δ Prices → Δ Exports → Δ Gold**
Note that the first and last arrows require no international capital flows
 - Thought this is 18th century model, it can be adapted to account for international capital flows, interest rates and central banks in 19th century. [From Temin, not paper]
Δ Gold → Δ Interest Rates → Δ Capital Flows → Δ Gold
 - Rise of fractional banking threatened Gold Standard. Fractional banking→increased chance of crisis→potential for contagion→ need lender of last resort
 - Bank of England had de facto *lender of last resort* status. The absence of this role (Temin's "no longer London, not yet New York") was a key difference in the interwar Gold Standard [what's Temin's name for this period]
 - Interwar: Britain's role undermined both by war and rapid development of other countries (particularly the U.S.), no new gold discoveries led to fears about adequacy of gold supply, and political changes (such as rise of workers parties) demanded new government priorities.
- 2. Charles W. Calomiris and R. Glenn Hubbard, "International Adjustment under the Classical Gold Standard: Evidence for the United States and Britain, 1879-1914," in Tamim Bayoumi, Barry Eichengreen, and Mark P. Taylor (eds.), *Modern Perspectives on the Gold Standard* (New York: Cambridge University Press, 1996), pp. 189-217.
 - [NO summary available. This could use some work]
 - Offer a test between the Hume price-specie flow mechanism and the alternative adjustment mechanism through capital flows and interest rates
 - Find evidence for asset price linkages between U.S. and Great Britain in the short run
 - Gold flows respond rapidly to demand for gold
 - Interest rate differences, risk-adjusted, were small
 - Domestic money shocks did influence exports and gold flows, but were not an important source, per se, of domestic output variation. Rather they were an important channel of influences from international disturbance to domestic output and prices
 - Focus on lowering transportation costs because in panics needed gold in person not in promise

4. THE TWENTIETH CENTURY

A. The Great Depression (11/13)

1. †Peter Temin, *Lessons from the Great Depression* (Cambridge, MIT Press, 1989), Chaps. 1-2, pp. 1-87.
 - What changed from 1913-1920:
 - International credit positions
 - US became largest creditor nation
 - Britain spent much of its capital
 - War reparations requirements (even though Germany avoided most of these)
 - Gold standard abandoned and painstakingly rebuilt
 - France and Germany had large real financial changes
 - France had large inflation during war. Weren't willing (lots of farmers) to suffer devaluation. Undervalued franc and accumulated gold

- Temin's thesis: While most have tried to find the cause of the Great Depression in the propagation of a small impulse to an unstable system, the source is better described by a severe shock attributed to the First World War. Policy makers, blindly faithful to the ideology of the gold standard that no longer fit the times, exacerbated the shock through a determination to adhere to contractionary policies.
- There was a general fear that abandonment of the gold standard would lead to depression. Temin argues just the reverse.
- Depression was not inevitable result of World War I. Had economic planners seen that institutions of Edwardian era were no longer viable (in particular, the gold standard), things would have been different. The Great Depression was not inevitable in 1929 or even after the first large fall in production.
- Inefficient balance of gold supply: both France and the U.S. had excessive gold reserves. World would have benefited had they taken the following course:
Inflate currency → higher nominal income → More imports → Gold outflows → more efficient distribution of gold
- Financial powers drew conclusion that floating interest rates after abandonment of Gold Standard led to economic chaos. Got causality wrong
- Temin takes on offered explanations for propagation of Great Depression
 - Stock Market Crash: Crashes had occurred before without economic disaster. Crash of 1929 reduced private wealth by 10%, but this alone cannot explain output declines of 1930s
 - Smooth-Hawley Tariff in 1930: should have been expansionary in the U.S.
 - First banking crisis: Americans had experience with short-term restrictions on payments, there was no substantial rise in interest rates after initial failures, and no increase in bank failures outside of the two banks in question (see Bernake)
 - Collapse of commodity market prices: real effect depends on status as net importer or exporter. U.S. effect was mixed.
- Countries clinging to gold standard, Germany, U.S. Britain and France, tried to take the following path: depress currency → import less → increase gold reserves → economy reinflates. This didn't work because everybody was trying the same thing. Even France and the U.S., with excess gold reserves, followed orthodoxy of gold.
- Temin concludes that contractionary monetary policy designed to protect gold standard and root out speculation was the cause of Depression
- Distinguishes between static and dynamic effects of deflation:
 - Static effect: same nominal amount of money buys more goods. This "deflation *substitutes* for depression."
 - Dynamic effect: Expectations of continued deflation will cause individuals to postpone consumption until future periods, when prices may be even lower. People choose not to borrow out of fear of paying back loans with dollars worth more than at present. This "deflation *causes* depression."
 - Results of deflationary policies: seen in the U.S. after continued with deflationary policies. At first, static effect dominates and conditions briefly improve, but dynamic effect takes over and depression follows.
- German situation: allows inflation in early 1920s, in part to reduce real value of WWI reparations. By 1930, fear of another outbreak of hyperinflation drives contractionary reaction to economic downturn. Neither French nor American willing to help Germans.
- British situation: After being lynch pin of pre-war Gold Standard and main impetus to return, Britain is the first to abandon gold, doing so in 1931 (U.S. leaves gold in 1933, France in 1936). Considered a failure and a "beggar thy neighbor policy". Devaluation stops British contraction. Production increases through export boost. But rather than pursuing expansionary policy, now possible with monetary policy freed from gold, adheres to contraction in the belief that this is what the world needs. To respond to

comparatively low American interest rates, Britain sells dollars, choosing contraction over expansion.

2. †Ben Bernanke, "The Macroeconomics of the Great Depression: A Comparative Approach," *Journal of Money, Credit and Banking* 27: 1-28 (1995). www.jstor.org
 - Temin: was the depression caused by falling aggregate supply or aggregate demand? Since both prices and quantities fell, we'd guess falling demand was the culprit.
 - Notes that most discussion of the causes of the Great Depression have focused on America [Temin's seems pretty broad]. Bernanke takes a comparative approach.
 - Argument: monetary contractions were the main cause of the Great Depression. The gold standard prevented central banks from conducting expansionary policy. As monetary shocks are nominal demand shocks, one needs to explain why these shocks had real effects (an upward sloping rather than flat aggregate supply curve). On the supply side: credit constraints caused monetary shocks to have real effects and interventionist policies led to rigid nominal wages.
 - One nifty equation forms the basis of the whole paper:

$$M1 = (M1/Base) * (Base/Reserves) * (Reserves/Gold) * P_{Gold} * Q_{Gold}$$
 - Some observations on each component:
 - M1 falls particularly strongly in those countries on gold standard
 - M1/Base (the money multiplier): falls sharply due to bank runs.
 - Base/Reserves (the inverse of the gold backing ratio): gold backing had a legally binding minimum (a maximum base/reserve ratio) in most countries, forcing central banks to intervene if this fell below. But it didn't have a maximum, so base/reserve could fall sharply. Base/Reserve tends to fall in countries that experience increases in QGOLD, reflecting fact that central banks generally sterilize the impact of increases in the quantity of gold.
 - Reserves/Gold: falls sharply due to exchange rate crisis; i.e. central bank with its currency under attack loses international reserves as it defends currency.
 - PGOLD: didn't change much during period in question
 - Bernanke concludes that banking crises, foreign exchange crises, and the sterilization of increases in the quantity of gold caused the contraction of M1. Also finds that banking crises only occurred in countries still on gold standard (Mundell-Fleming: gold standard removes central banks ability to function as lender of last resort).
 - Given that countries abandoning gold standard removed external constraints on monetary reflation, seems that they would enjoy stronger and quicker recoveries than those that adhered to gold. Bernanke notes that any endogeneity bias in the selection of exchange rate regimes would bias estimates of the effect of the gold standard negatively: we'd expect that financially weaker countries abandoned gold first.
 - Bernanke's panel regressions suggest that yes, the gold standard, could be responsible for contraction.
 - Conclusion/Summary: Analysis supports view that monetary contraction was leading source of Great Depression and that monetary reflation was source of recovery. Furthermore, on the supply-side, wealth redistribution (caused by debt deflation) may have had aggregate effects in the redistribution was enough to cause financial panics. Empirical evidence suggests that slow adjustment of nominal wages was an important factor leading to monetary "non-neutrality".
3. Charles W. Calomiris and Joseph R. Mason, "Consequences of Bank Distress During the Great Depression," *American Economic Review* 93: 937-47 (June 2003).
 - Question: through what mechanism did bank distress matter for the Great Depression
 - Did bank distress reduce money supply through bank closures and freezing deposits?
 - Or was the monetary shock transmitted by worsening balance sheets of borrowers that reduced the supply of credit by healthy banks.

- They conclude the latter. Temin's moral to the story: bank failures got all the attention because data on them was easy to find. Calomiris and Mason go to data on individual banks to paint a richer picture.
 - Conclusion: evidence indicates that variation in the supply of bank credit explains a substantial amount of the variation in state income growth during 1931 and 1932.
- B. Recovery (11/18)
1. Peter Temin, *Lessons from the Great Depression* (Cambridge, MIT Press, 1989), Chap. 3, pp. 89-137.
 - By shifting to a new policy regime of expansionary intervention, the U.S. and Germany lifted themselves out of the Great Depression. This suggests a tendency towards capitalism at times of prosperity and socialism in times of distress.
 - Regime shifts vs. isolated actions: continuing a theme of the book [not sufficiently well described above] Temin asserts that policy actions alone were insufficient to “stem slide into the abyss.” More important than any particular policy change was the indication of a fundamental shift in attitude by U.S. and German governments around 1933. Expansionary ideas had replaced contraction. This shifted individual expectations and paved the way for investment and consumption increases.
 - Comparing the recovery in Germany and the U.S.: Temin thinks depression ended in both in 1933. Recovery in Germany is led by consumption, as Germans expand through increasing employment at the cost of lower wages. American boom derives from investment, with policy that focuses on maintaining wages at the expense of employment.
 - Wages and employment: Temin argues that favoring employment over wages leads to short term gains, as increased national wealth can be redistributed to the general benefit. In the long run, however, Temin seems to believe that maintaining wages wins out, owing to greater rewards for innovation and technical progress (we'll revisit this later in “The Most Technologically Progressive Decade”)
 - Some statistics: Germany lowers unemployment from 30% to 2% between 1933 and 1938 (some of this comes from pushing women out of the workforce). In the U.S., unemployment falls from 24% to 14% in 1937, before climbing to 19% in the recession of 1938.
 - Characteristics of the socialism of the recovery
 - Regulation or ownership of the “commanding heights” of the economy (transit, communications, utilities, etc.) [sounds like NEP]
 - Public control of (or at least efforts in) health and welfare
 - Redistribution of “social dividend.” The last feature has been the most enduring. Social Security and Medicare in the U.S. and Health Services in Britain are barnacle-like national institutions.
 - Aside: Temin likes to refer to the period from 1914 to 1945 as the *Second Thirty Years War*, highlighting the tensions of the interwar period, characterized by French and American hoarding of gold.
 2. †Christina Romer, “Why Did Prices Rise in the 1930s?” *Journal of Economic History*, 59: 167-199 (March 1999).
 - Prices rose in most years between 1933 and 1941 even though output was substantially below trend
 - This inflation cannot be explained by effects of devaluation (can only go off gold once) or changes in expectations (this only can explain part of difference).
 - Romer's explanations:
 - Extraordinarily rapid growth (even if still off trend)
 - National Industrial Recovery Act encouraged minimum wages and collusive price arrangements.
 - The Growth Rate Effect
 - Need to amend standard model to include growth rate, not just deviation from trend

- Some raw materials have long lead times, which make it difficult to increase supply quickly in response to increased demand.
 - Romer regresses raw material inflation and manufactured good inflation on output growth. She finds significant coefficients but they're substantially higher for raw materials.
 - NIRA: passed in 1933 and ended in 1935. Set minimum wages, encouraged collusion, prohibited wage cuts. Romer argues that it prevented the standard deviation-from-trend effect from working in the mid-1930s.
 - NIRA helped industries establish "industry codes" – gov. officials, industry executives, and labor leaders from the industry would meet to determine prices and (minimum) wages for the industry. It was encouraged collusion between different companies in an industry, but also labor and industry. Idea was to keep both wages and prices up.
3. Field, Alexander J, "The Most Technologically Progressive Decade of the Century," *American Economic Review*, 93: forthcoming (September 2003)
- The period from 1929 to 1941 was, in aggregate, the most technologically progressive of any comparable period in U.S. economic history.
 - Businesses and government adopted more new technologies, resulting in the highest rate of measured peacetime, peak-to-peak multifactor productivity growth in the century
 - The Depression years produced advances that replenished and "expanded the larder" of underexploited techniques, thus providing the basis for much of the productivity improvements in the 1950s and 1960s.
 - Real question: was the bulk of multifactor productivity gains achieved before full scale U.S. mobilization for WWII in 1942. People like to attribute gains to war due to the volume of military output and the extraordinary and obvious achievements of the war. But some reasons to temper this view exist:
 - Gains weren't really miraculous
 - Actual war period was short—only three years
 - Spillovers worked in both directions
 - Looks at macro-level productivity data to show gains were highest between 1929 and 1941 peaks.
 - Results rest on choice of comparison period. Field argues that need to compare peak-to-peak, where others looking and productivity during the depression often compared full employment period in 1929 with the still depressed economy of 1937. He argues that military spending still represented only 5% of GNP in 1941 and active duty military personnel had increased but not so much as to hurt interpretation of results.
 - Uses micro-level data to support macro level results: R&D employment trebled, employment of research scientists grew, companies developed Lucite, Teflon, Nylon, etc.
 - Argues that increases in labor productivity during the 1930s were due to temporarily losing the weakly performing tail.
- C. The Interwar Period in Context (11/20)
1. Jeffrey G. Williamson, "Land, Labor, and Globalization in the Third World, 1870-1914," *Journal of Economic History*, 62: 55-85 (March 2002).
- Looks at data from 9 "periphery" countries covering 1870 to 1940. Finds that commodity price convergence was even stronger in the periphery than in the industrialized Atlantic economy, while average living standard diverged dramatically.
 - Why were prices converging: technology (the screw propeller, refrigeration, Suez Canal (1869), Panama Canal (191x), etc.) and politics (Gun Boat Diplomacy)
 - Distinguishes between "land abundant" and "land scarce" countries
 - Regresses $(wage/rent) = (P_A/P_M) + (Land/Labor) + Urbanization$
 - Results
 - Siam: manufacturers arrive, P_M falls $\rightarrow P_A/P_M$ rises \rightarrow more demand for land in Siam \rightarrow rents increase \rightarrow wage/rents falls [sign of Δw is indeterminate]. Manufacturing

- in Siam “evaporates”. Siam specializes in its comparative advantage, becomes an agricultural exporter
- More generally, the recorded decline in wage-rental ratios in land abundant areas—the Southern Cone, Punjab, and Egypt—prior to WWI is “simply enormous”
- Four possible reasons for wage-rental trends
 - Changes in the relative prices of agricultural goods (should go up). Impact should vary: magnitude negatively correlated with level of development and positively correlated with size of agricultural sector.
 - Trends in land-labor ratio
 - Capital deepening in the non farm sector should draw labor off land and increase the wage-rental ratio
 - Land-saving technological change, which characterized land-scarce Europe, made a powerful contribution to rising wage-rental ratios there.
 - Globalization had such a large impact on income distributions in the Middle East, S. Asia, and SE Asia and such a small effect in Europe because both P_A/P_M shocks and their multipliers were smaller in Europe
 - Three concise summary points:
 - Commodity prices converged, and this convergence was bigger in periphery countries than in Atlantic economies. Convergence was driven by transportation revolution that was more meaningful in periphery and not offset by tariff intervention.
 - Factor prices converged at the same time living standards and income per capital diverged sharply between the center and the periphery.
 - Prior to WWI, globalization set in motion powerful forces of inequality in resource abundant areas [compare to Engermann & Sokoloff]
2. †Maurice Obstfeld and Alan M. Taylor. “Globalization and Capital Markets.” NBER Working Paper No. 8846 (March 2002). <http://papers.nber.org/papers/w8846>
- Can understand changes in openness of international capital markets since 19th century in terms of the trilemma. You can only have 2 of the following three:
 - Free cross border capital movement
 - Fixed exchange rates
 - Independent monetary policy used for domestic objectives
 - The growth of international capital markets has been neither smooth nor monotonic
 - Breaks history into four periods
 - 1870-1914: The Gold Standard Years. Global capital markets centered in London. Fixed exchange rate system was largely stable. Interest rates across countries tended to converge. Increasingly globalized economy visible in both capital and goods and labor markets. Missing piece: monetary policy.
 - 1914-1945: Interwar Years. Globalized world torn apart by wars and depression. Policy making increasingly non-cooperative (nothing beats wars for a lack of cooperation) and domestically focused. Capital controls wide spread. Missing piece: fixed exchange rates and, for many, capital mobility.
 - 1945-1971. Bretton Woods. Rebuilding global economy under (mostly) fixed exchange rate system. IMF sanctioned capital mobility controls.
 - 1971-present. Fixed exchange rates die, though some try to stick to pegs, dollarization, or currency boards. Capital increasingly mobile.
 - Testing the hypothesis. Asserts there’s no single measure of openness. Looks at:
 - Gross stocks of foreign capital: data show that prior to 1914, Britain was truly “banker to the world” Both foreign assets and liabilities follow U-shaped pattern
 - Exchange-risk free nominal interest parity: compares onshore and offshore rates measured in the same country. Finds arbitrage gains small pre-war, rise through 1940s, stark shrinking after war, rise again with 1960s sterling devaluation, become tiny after elimination of UK capital controls in 1980.

- Equity and Bond returns. Quantity data on international equity investment are hard to find, so the authors examine price data looking at long-run equity returns. Another U-share in the dispersion of returns.
- They also determine that there was a (small, but) positive effect of actually going back on the gold standard – doing so inspired confidence in the finances of the country; they find that the “risk premium” for a country that goes back on the the standard falls so that it becomes cheaper for those countries to borrow.

D. Assessing US Growth (11/25)

1. Christina Romer, “New Estimates of Prewar Gross National Product and Unemployment.” *Journal of Economic History*, 46(2): 341-352 (1986). www.jstor.org
 - Revises pre-war data on GNP and unemployment
 - Romer finds that previous work by Lebergott and Kuznetz (in the 1960s) overestimated volatility
 - Lebergott used commodity price and production data to interpolate GNP data for the intercensal years. Problem: assumed fluctuations were 1-for-1.
 - Lebergott also calculated unemployment rates for the same period, which were also commonly used (and believed). The problem was that he failed to account for the cyclical nature of the *labor force* when calculating the unemployment rate (but he did account for the cyclical nature of the number of unemployed). Romer tries to correct this as well.
 - Romer regresses changes in GNP on changes in commodity production for the period for which we have good data and finds that the coefficient on commodity prices should be about [not sure, maybe 1/3]
 - Why this is important:
 - These results challenge the belief that the 40 years before the Great Depression were more volatile than those in the postwar era.
 - Also challenges the notion that business cycles are lengthening; by smoothing prewar fluctuations, some cyclical lows disappear.
 - Note that Romer qualifies that these results do *not* challenge the severity of the Great Depression [contrast with Costa’s findings]
2. †Dora L. Costa, “Estimating Real Income in the United States from 1888 to 1994: Correcting CPI Bias Using Engel Curves.” *Journal of Political Economy*, 109: 1288-1310 (December 2001).
 - The CPI has a bias prior to 1970. When we correct for this bias, we need to rethink some of our long-held beliefs about real wage movements
 - Because of taste changes, relative price changes, changes in shopping patterns (particularly buying at discount stores), quality improvements of existing goods, and the late introduction of new products into the CPI, the CPI likely overstates the true cost of living.
 - This is especially a problem during the 1930s, when (according to Field) there was a huge increase in the number of new products – i.e. the consumer’s bundle was changing rapidly in the 1930s.
 - How Costa came to notice this was a problem: found in another paper that share of expenditures on entertainment was rising during the 1930s. But the real income elasticity of entertainment is generally thought to be greater than 1.0. What was going on?
 - Uses Engel Curves and household expenditure data to look at food and entertainment expenditures, because they have income elasticities substantially different from 1.
 - Finds inconsistencies between trends in total real expenditures (adjusted by the CPI) and trends in food and recreation expenditures, especially in the 1920s-1930s and the 1970s-1980s. Believes that this can be partially explained by CPI biases.
 - CPI bias was minimal before 1919. Rose to 0.7%/year between 1919 and 1935 and as high as 2.7%/year from 1972-82.

- Key implications: real incomes were rising during the Great Depression so real expenditures in 1935 were above their 1919 levels. Real income growth rates in the heretofore-considered-stagnant 1970s were as high as they were in the 1980s (4%).
- E. Inequality in the Long Run (12/2)
1. †Claudia Goldin and Robert A. Margo, "The Great Compression: The Wage Structure in the United States at Mid-Century," *Quarterly Journal of Economics*, 107: 1-34 (February 1992). www.jstor.org
 - "Great Compression" describes the wage narrowing that occurred in the U.S. during and after WWII. Wages narrowed by education, job experience and occupation, and wage variance within categories of workers declined too.
 - Emphasize that this phenomenon was in many ways similar to wage stretching that occurred after 1970s.
 - Considering only white men, the ratio of log weekly wages of 90th percentile to those at the 10th percentile fell from 1.45 to 1.06 between 1940 and 1950. The same measure was 1.46 in 1985.
 - One hypothesis for change is that National Recovery Act and National War Labor Board may have played a role through the minimum wage, limiting raises, etc.
 - Main source of data is the census (and PUMS). Use available industry specific data with finer date ranges to attempt to get at effects of war board
 - They find that although there is some data suggesting that the compression began before the 1940s, it appears in their data that returns to schooling may not have been reduced until the 1940s [contrast this with the Golden & Katz paper]
 - Find that wage structure did not immediately rebound to pre-war levels after WWII the way it had after WWI. Attributes this persistence to:
 - Relative demand for less educated workers [check for why this would be]
 - Strength of American labor movement
 - Increases in the supply of educated labor served to depress price of skilled labor
 2. †Claudia Goldin and Lawrence F. Katz, "The Returns to Skill in the United States across the Twentieth Century," NBER Working Paper 7126 (May 1999). <http://papers.nber.org/papers/w7126>
 - Takes a longer look at changes in wage dispersion than did the Goldin and Margo paper
 - 1939 has been starting point for most work on wage inequality because that's when census starts collecting data. Goldin & Katz are creative in finding earlier sources: surveys of manufacturers, census data from 1890 that weren't recorded in the main body of the census, and Iowa state census.
 - Biggest contribution of this paper: there was a compression in wages in the 1910-1920 period. At this time, though, there was no NWLB, which Goldin had used as an explanation for the compression between 1940 and 1950. [but I don't know what Goldin and Katz's new explanation is]
 - [Need to finish]
 3. †Dora L. Costa, "The Wage and the Length of the Work Day: From the 1890s to 1991." *Journal of Labor Economics*, 18: 156-181 (January 2000). www.jstor.org
 - [Need to finish]
- F. Overview (12/4)
1. †Fogel, Robert W. "Catching Up with the Economy." *American Economic Review*. 89(1): 1-21 (March 1999). www.jstor.org
 2. †Richard Easterlin. *Growth Triumphant*. (Ann Arbor: University of Michigan, 1996), Chapter 11, pp. 145-154.