It's All in the Data:
Discovery Learning with Economic Statistics in US History

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The United States has been at the forefront of developing statistics that describe populations as well as the mathematics to process those statistics. Even before the Census Bureau became a permanent feature of the U.S. Government in 1902, statistical inquiries were made into all aspects of American life in order to more fully understand the rapid development and sociological changes taking place in our new nation.

Statistics is where math becomes directly applied to issues of social concern. Many students of the social sciences fear, or even loathe, mathematics, thinking of it as a state requirement they will be glad to get over with. Students in math sometimes do not see the relevance of their tasks when the numbers seem, at face, arbitrary. Due to the excellent quality and quantity of the historical data available describing the U. S. population throughout its young history, US History is a particularly appropriate opportunity to use math with social data.

I, too, hated math. Though I was talented at learning and testing in math, I never understood the point of it. To me, it was abstract. I was never exposed to applied mathematics until much later in my academic career when I was doing graduate level research my junior year of college. Suddenly, all of the scholarly journals were full of numbers and equations from which conclusions were drawn. It was like viewing a foreign language. I was suddenly upset that none of my teachers had exposed me to this when I was actually learning math. I might have paid more attention, I might have continued with my studies in math; regardless, I would have certainly understood the point.

This unit aims to use statistics from the National Bureau of Economic Research to allow students to understand the importance of statistics and numbers. At the high school level, mathematics and social studies are taught independently from one another though the disciplines have a distinct influence on one another. Juniors taking U.S. History are commonly in Algebra II. Though there are many ways to conduct an interdisciplinary study using both math and US History, I have chosen to produce a curriculum that will exercise mathematical ability and intuitiveness with data sets from U.S. History.

Why is History so Boring? A Case for Discovery Learning

In *Lies My Teacher Told Me: Everything Your American History Textbook Got Wrong*, James W. Loewen berates traditional teaching of U.S. History in American high schools. Loewen presents a strong critique of teachers that stick to the textbook and have students learn, or "memorize," events and characters. His reasoning in identifying the causes of such banal teaching is thorough, and I recommend that all U.S. History teachers read his book.

Despite the strength of Loewen's critique and the truth to which he speaks, I personally disagree with one of his claims – the one that suggests high school history teachers do not venture outside of the textbook to be safe and avoid the possible chaos of unexplored territories. I believe that history teachers want to venture outside of the textbook, that they want to teach lessons that are "relevant" and "inspiring" to students.

I am prone to believe one of Loewen's other reasons that U.S. History teachers fail their students: teachers don't venture outside of the textbook because they do not have time. Most committed teachers work ungodly hours for their salary. In addition to being in the classroom five or six hours per day, all teachers must plan lessons in a manner supervised by their superiors, give students ample feedback through grading and written comments, develop and maintain (as well as keep records of) contact with parents, file various forms of paperwork with the administration, attend "professional development" activities, and offer after-school tutorials. At most schools, teachers are assigned various policing duties and administrative committee work. Many teachers supervise extra-curricular activities or coach sports. Most teachers have families and children. Some teachers even work additional part-time jobs to supplement their meager incomes.

Loewen obviously has a bias towards a concept called "Discovery Learning," the idea that students should explore their environment and learn on a purely heuristic basis. This is the idea behind lab work in chemistry, dissection in biology, problem solving in mathematics, more or less all field trips, and much more. All teachers can agree in the relative superiority of Discovery Learning as a technique for students to learn.

However, Discovery Learning requires resources and planning that teachers can only wish they had enough time to prepare. Unfortunately, most Discovery Learning units have to be provided to teachers with materials. U.S. History, in particular, poses a particular problem for those implementing Discovery Learning. Within U.S. History, discovery would occur with a rich array of primary sources and data sets so that students can read them and come to conclusions on their own; instead of reading an interpretation of history, they can make an interpretation of history. It all sounds great.

The primary problem, then, is that teachers do not have access to the myriad resources of antiquarian societies and statistical databases, nor do they even have access to the rather large body of published collected writings on sale at bookstores (unless they pay for it out of their own salaries). Hope, however, is beginning to creep in as historical societies and databases are ever more available on the Internet. What's more, they're for free (sometimes).

With this unit, I'd like to contribute to the body of U.S. History units that promote "Discovery Learning." These statistical tables are a part of several units where students are encouraged to look at data and infer the meaning of that data.

Preparing Data is a Pain

Unfortunately, sifting through and preparing data is vexingly tedious. Out of the time I have spent preparing this curriculum, most of it was spent locating, copying, and arranging data in the various forms that it seems to take. Data doesn't always come in the same form and sometimes it seems as though the people that uploaded data sets did it in a manner so confusing that it can only be concluded it's a practical joke on the user. For this reason and this reason only, my focus here comes from the data sets put onto the Internet by the National Bureau of Economic Research (NBER).

The NBER data sets are available in ASCII form. This means they can be imported into every form of software imaginable, but it also means that it is just numbers and nothing else. Making sense of it, importing it, arranging it, making pretty tables with labels, etc., is mind numbing. Luckily, I've been subscribing to an online music service where I can listen to just about anything for one monthly fee. It's given some sanity to this process, and I recommend to teachers everywhere they subscribe to such a service.

Inferring from Data – a Better Approach

Teachers are trained not just to lecture and induce rote learning. Arguably the first educational theorist, John Amos Comenius (1592-1670), set out as a zealot to change the face of education in the early 1600s. As Barzun points out:

> At this point anyone who has had much to do with education or has dipped into its history can guess what Comenius said: things, not words – hence the Sensualism of the textbook. Change school from a prison to a *scholae ludus* (play site), where curiosity is aroused and satisfied. Stop beatings. Reduce rote learning and engage the child's interest through music and games and through handling objects, through posing problems (the project method), stirring the imagination by dramatic accounts of the big world. (Barzun 181)

The fact that someone in 1600 went around trying to reduce the rote learning tells you exactly how far educational institutions have adapted, on the whole, according to what the theory and research tells US – nearly none – even if Comenius ended up leading Harvard for a time. What exactly it is about institutions that insist on following industrial models of education is well beyond the topic of this paper and is reserved for the whole body of literature on education.

How can we go about with the vision of theorists in history? We'd be troubled to pass around physical objects or give them a play site, but we wouldn't be troubled to pose more problems – allow more problem solving. We can offer more problem solving with statistics! Take this example of "Typical Text" vs. "Discovery Learning":

Typical Text

The U.S. Economy grew exponentially from its birth onward. Growth accelerated at a globally unprecedented pace – not seen before and only seen again since the rise of modern China in the late 1990s to present. Joseph H. Davis created an index of industrial growth out of fragmented, early data to create the following chart:
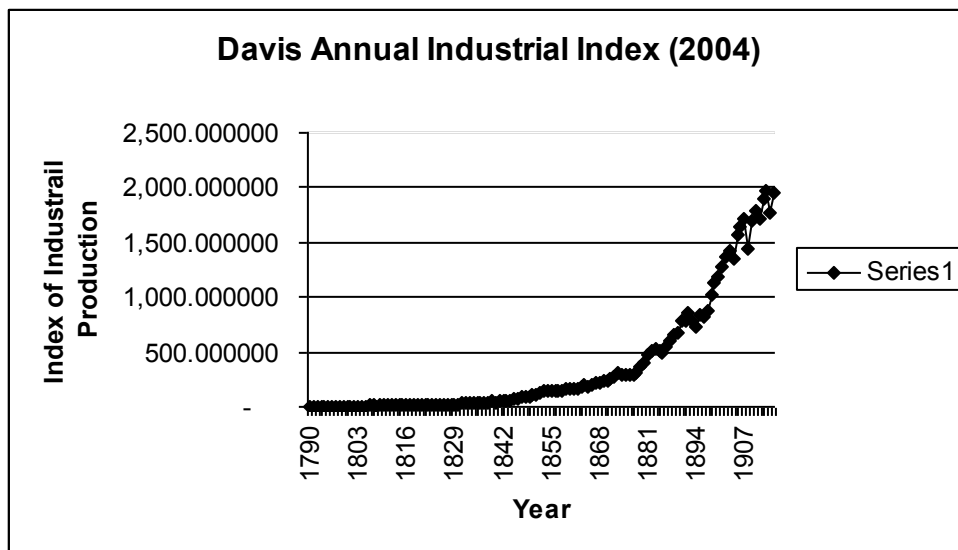
Davis' Index of Industrial Production is not exciting to students. The claim: "the United States economy grew at unprecedented rates from the 1860s onward when compared to all of human history" is also, unfortunately, uninviting to my students. Fifty minutes of that, and I would be spending part of the time trying to keep them awake.

Discovery Learning Text: Why does this graph look the way it does?

Immediately, my students will start to guess. My students will start to deduce from what they already know: "Is it because of the automobile? Music? Movies? What then?" At this time, it is best to let their imaginations wander and then ask them to do some basic inquiry into their textbook and see what they can muster up themselves. (The answer is considerably long and would be a whole unit unto itself.)

Proving the superiority of this tactic is almost moot – all teachers are taught to force students to make connections to what they already know, to spark situational interest through problem solving, and to allow students time for inquiry and processing.

THE ECONOMIC HISTORY OF THE UNITED STATES IN A NUTSHELL

Since I've chosen data sets from the National Bureau of Economic Research, it may be useful to do a quick survey of U.S. Economic History. If you are new to U.S. History, I may go over some things you didn't know. If you are a seasoned historian, you will (hopefully) be somewhat interested in my interpretation and perspective, as my own biases guide the accompanying units.

Personal Bias in Economic History

My biases are quite simple: I am an economic conservative and a social liberal. In surveys I end up getting categorized as Libertarian or Republican, but I tend to disagree with both of those parties in practice. I am one of these (non)rarities that would actually like everyone to stand by these statements: "Business is more efficient than Government" and "Injustice anywhere is a threat to justice everywhere."

A Short Economic History of the United States

In the beginning, the American economy was overwhelmingly agrarian. The South had developed a plantation aristocracy based on tobacco and later cotton. From this aristocracy came a mature, self-sustaining culture; men arose with unparalleled acumen as libertarian political philosophers and politicians. Unfortunately, this culture also needed slavery to maintain it and thus the South developed a sort of libertarian anxiety over their racist foundations and economic differences with the North, which was finding itself in the industrial loop, so to speak, with Northwest Europe.

The original industrial revolution stretched from England to New England, where the ubiquitous meandering of streams and small rivers in the countryside allowed the use of water for power – the mainstay of the early industries. The eventual core sectors of industrialism – banking, trading, and ports – seemed to find an early home on the Northern portion of the east coast – particularly in New York City. As industries created an economic boom in the North which required laborers, the South became more and more resentful of an increasingly populous and powerful, yet "uncivilized," North. The Northern opposition to slavery, while trumpeted by humanitarian Abolitionists, ultimately found its voice not as opposition to racial inequality but as opposition to unfair competition and the need for cheap labor in the North.

The Civil War, which was fought with a pretense of national unity vs. libertarian localism, was ultimately about the national anxiety over slavery. The South had seceded out of fear that the election of Lincoln, with a strong support base in Northern Abolitionists, would be the first step in the undoing of slavery. And how! Lincoln ended up being not only a genius orator of American values, but also was a fierce and realistic commander-in-chief. After going through several generals who would not seize the moment of opportunity to crush the Southern armies, Lincoln found trust in Grant who would be more proactive in exploiting opportunities. It was General Sherman along with cooperative slaves that set enough of the South ablaze to cause a severe economic collapse in what the South called a War of Attrition.

Reconstruction, today, connotes the period of liberal dominance through the Republican Party with a strong Abolitionist base. It's true, during this period Northern Republicans traveled to the South to instill some measure of racial equality, armed with the 13th, 14th, and 15th amendments. However, it was also a period of economic reconstruction. Early attempts to industrialize the South, however, failed as miserably as the attempts to create racial equality. With the uprising of the Black Codes and Jim Crow Laws, former slaves and poor whites alike lined up for the new sharecropping system where they would be forever in debt to the aristocratic landowners. It wouldn't be until the rise of the energy industry giants in the Gulf Coast that the South would again play a major role in the U.S. economy.

For the North, as is always for the victor, the war was an economic boost that set the industries and financiers on an unprecedented and almost surreal period of wealth accumulation now referred to as the Gilded Age. It's more nicely referred to as the Second Industrial Revolution or the period of Industrialization, in which the United States swallowed whole the excess population of Europe and integrated the Western Frontier through waves of brave, idealistic, and perhaps foolish homesteaders sick of their lot on the East Coast or in Europe.

The homesteaders were only outpaced by headstrong military men leading the construction of the Transcontinental Railroad and the remnants of both Union and Confederate forces on the genocide nicely referred to as the Indian Wars. It was the organizational structures – the disciplined and single men, the financiers, and the rail lines – that were incubated during the Civil War and released upon the nation afterwards that made this possible.

During this period of industrialization, the textile industry, the grandmother of them all, grew large and efficient manufacturing processes – requiring lots of cotton, lots and lots of cotton. The Civil War had required uniforms in carefully calculated sizes and the birth of ready-to-wear clothing meant people were buying more clothes than ever before. Before India was integrated into European supply chains, in the South cotton was king. Meanwhile, the homesteaders were working the land of the Great Plains and shipping their grains and corns back to the manufacturing centers of the Northeast. America was quickly becoming the breadbasket of the world, and would twice become so as Europe began the descent into world war.

To give credit to only the organizational building capacity of the Civil War would diminish the importance of a number of other factors: the timely discovery of the uses of oil and the Bessemer process of making steel; the extraordinary role of entrepreneurs like John D. Rockefeller and Andrew Carnegie, who through thrift and shrewdness bought competitors and businesses within their supply chain to the point of near monopoly; and the growth of lawyers and accountants and their ability to use new legal structures like the corporation and later the trust to mobilize massive amounts of capital without risking the entire assets of any one capitalist.

While a few shrewd capitalists were getting very wealthy and making the U.S. the Economic miracle of the world, the common laborer was getting worse off than before. Wages were meager and were actually decreasing as efficiency required less skill and training while the surge in immigrants meant that people would work for cheap.

Working conditions were unimaginable from today's perspective. Before the onset of government regulation, twelve and even sixteen hour workdays were not uncommon, six or even seven days a week. Breaks were rare, lunches were short. Lighting was bad, machines were dangerous, and the air was full of chemicals and particles.

Urban areas became crowded and unhealthy. The manufacturing bases required that laborers move to the city. With meager wages, people moved into apartment buildings called tenements that often had no natural sunlight, packed many people into a room, and shared sanitation

facilities (if there were any at all). There was no municipal garbage service or toilets for the poor areas, so filth and waste piled up and attracted disease ridden rodents.

Labor movements became particularly active to try to win shorter workdays, minimum wages, and better working conditions. They would strike and protest in the streets. Unions like the Knights of Labor, the American Federation of Labor, and International Workers of the World gained in popularity. Incidents like the Pullman Strikes and the Haymarket Riots made news worldwide and were dramatic and huge in scope, with fatalities for both the strikers and law enforcement.

Business counterattacked by hiring immigrant labor (strikebreakers) and replacing the striking workers. They would call in the police and in some cases the National Guard. They would often fire the leaders, sometimes placing their names on a list shared with other employers (called blacklisting). They would also force returning and new employees to sign contracts that stated they would not join the union (yellow-dog contracts).

Many of the poor started to look to socialism and later communism as an alternative to capitalism. Eugene Debs, the socialist candidate for president five elections in a row, won almost a million votes in the presidential election of 1912. Socialists won many seats in local elections, especially in Wisconsin and Oklahoma.

World War I was viewed as crazy from the American perspective, and the consensus of the larger population was that it made amusing headlines with these fast-firing guns and trenches and gases, but it was no theatre on which Americans need take stage. Wilson won reelection with the triumphant slogan "He Kept Us Out of War." Wilson as a Princeton man, however, was not immune to the lures of selling Europeans all the supplies they might need in their efforts to exterminate one another, especially if we were to loan them the money to do so. In particular, the banks of New York, the merchants and the farmers were all itching to fill orders for both sides. Wilson, understanding that the fathers and mothers of America's ideas were from Britain and France, knew we must take sides were their survival at stake. And for a while this looked to be so. Wilson slowly and secretively prepared the nation for war, beginning with price floors for agricultural products. Meanwhile, the House of Morgan started loaning the British a healthy sum.

World War I, more than World War II, laid European lands and production to waste. The industrial centers of France and Germany were unproductive under fire, fertile fields lay fallow for years, many scorched and gassed and polluted with the blood of its children. European nations spent more than just their war chests; they needed money to buy food and supplies. American capitalists were happy to help with this problem.

U.S. Banks loaned money used to pay us industrialists and farmers. The price floors set up by the Wilson administration made farming so lucrative that investors rushed in to start what would later be referred to as agribusiness – farmers took loans to acquire land, tractors, and other capital equipment. Times were good, until the price floors were ended.

Demobilization from WWI proved problematic for the American economy for a short period in from 1919 to 1921. Agricultural production plummeted. A flood of soldiers reentered the economy and a period of structural adjustment necessitated that women leave their newfound jobs. Meanwhile, the competition for jobs dropped overall wages leading to a series of strikes in 1919 that made the nation seem anxious over a potential communist revolution like the one in Russia. This is a lesson the US government learned well.

Eventually the money banks earned from our farmers, our soldiers and Europe made its way into the hands of a new class of entrepreneurs using new technology. Radio, telephone, electronic appliances, and automobiles took America by storm in a period known as the Roaring Twenties. The entire duration of the 1920s through Harding, Coolidge, and Hoover was unanimously pro-

business and Republican. The telegraph and telephone made it so the everyday man with money to save found his money a home in the stock market. The New York Stock Exchange experienced a surge in activity that created what is known as a market bubble – investment money furiously trying to find a home in a stable market with money making money off investment money making money off investment money, eventually as certain keystone businesses fail the entire system pops.

The Great Depression is measured in time from Black Thursday, October 24th 1929 to U.S. entry in WWII in 1941. Production of nearly everything came to a halt in the peak year of the Depression in 1932. Franklin D. Roosevelt came into office with the promise of a New Deal, which commenced with a hundred days of furious legislative activity where Congress was met with and passed Roosevelt's plan for recovery, involving every effort to relieve and employ the entire American population. In addition, the New Deal created government agencies with the unenviable task of trying to reign in capitalism. The government, the executive branch more specifically, grew in size to a level our libertarian founding fathers would be fearful of; with it, taxes increased, particularly for the wealthy. The New Deal kept the population afloat and the government, for the first time in its history, became an institution with a direct affect on the lives of almost every American.

The economy slowly gained some ground, and faith was slowly restored in the capitalist system. However, it wasn't until mobilization for WWII that the economy fully recovered. There's something about filling orders for supplies, the heavy industry involved with planes and tanks and battleships, and the displacement of twelve million young men that gets aggregate demand going and brings wages up. As a matter of fact, the government had to put a freeze on wages, but competition for employees was so fierce that they offered benefits instead. Thus, America saw the proliferation of health insurance and retirement funds.

Demobilization was less of a factor after WWII because the U.S. Government kept up defense contracts and maintained a sizeable standing army. However, the savings from our soldiers and the immense capital built up during the war period was spent on more electronic appliances and more automobiles to go in more suburban homes than ever before. The 1950s was unequivocally a time of great economic prosperity and demonstrated the consumption power of the middle-class, home-owning family unit.

The United States emerged from WWII as the leading superpower, competing with the Soviet Union for influence in the known world. The Truman Doctrine, which stated that the United States would support those populations resisting communism everywhere, created a United States that would use economic influence and foreign aid to extend its reach to anywhere in the world the Soviets would not be, and many times where they already were. Thus, the Fifties saw the birth of the Cold War.

The Cold War would ultimately mean two things for the U.S. Economy. First, the government could keep and even extend the portion of national wealth that went towards the military and its contractors. Second, the United States could develop special military and economic relationships with countries around the world on the premise that we were containing communism. We could secure markets for U.S. exports and finance an entirely new sector of the economy.

The issue of economics would not really arise again until the 1970s when the shock of high oil prices during the Oil Crisis of 1973 sent the economy spiraling into a condition known as stagflation, when economic stagnation meets an overall inflation in the cost of living. Stagflation is a peril not understood under the typical economic framework because inflation is generally understood as a by product of increasing wages and low unemployment.

The cure for stagflation can be summarized in one name: Reagan. Reagan campaigned stylishly with the phrase "Get Big Government off Our Backs!" which he repeated enough to blaze into the American heart the neo-conservative movement, an explanation for the support for George W. Bush. Reagan took the theories of conservative economic theorists like Milton Friedman and made them popular: reduce taxes, eliminate government spending, and reduce barriers for investors. He then added one element: the absurd incurring of national debt to finance huge military expenditures, and ultimately programs that seemed politically impossible to cut. The result was seen in the late 1980s with the fury of Wall Street crashing in on itself, ending in a recession during George H.W. Bush's term.

Conservatives will tell you, it was the Republican policies that were responsible for the economic success of the 1990s. They are wrong. In my opinion, it was the explosion of new industries in the technology sector that absorbed white-collar labor, funneled investment monies into profitable companies like Microsoft and increased the overall productivity of every other industry.

Ultimately the 1990s would end the same way as the 1980s – with a stock market crash and investments coming to realize that throwing the superfluous capital roaming the globe at upstart companies in a new industry that hasn't found profitability yet (the Internet) is a bad idea.

So here we are, 2006, and we have a Reaganite in the White House who will sign checks to increase the size of the government on all fronts. The internet has found profitability, and all of the profitable companies are based in the United States. Cellular telephones are a dominant new industry, and the music industry and later the movie and television industry are trying to find ways to go on your IPhonePod. Meanwhile, the American Consumer is heavily in debt, just like in the late 1920s. The Stock Market has resisted a crash because of pro-investment policies of the Bush administration. What will happen? Only time will tell.

UNIT: DISCOVERY LEARNING IN US HISTORY THROUGH STATISTICS

The Unit is divided up into (1) Short Inference Exercises (SIE), (2) Inference Exercises (IE), and (3) an accompanying lesson plan entitled *Using Illustrative Statistics*. These should be implemented in order. There are eight handouts, one for the SIE and seven for the IE (one for each exercise). *Using Illustrative Statistics* must be taught after all of the exercises are completed because it requires students to be familiar with the tables in the exercises.

The SIE and the IE are designed as preview or review activities across units or they can accompany one review unit. They allow students to problem solve and make inferences, thus sparking their initial interest if used as a preview activity. If they are used as review units, they allows students to draw on their prior knowledge to problem solve.

The inference activities (SIE and IE) are simply questions that accompany tables of data taken from the National Bureau of Economic Research (NBER), with the exception of one taken from an LSU website. The questions range all along the scale of Bloom's Taxonomy, and some of the questions would be impossible to answer without either prior knowledge or reference materials.

Teachers may want students to be able to use reference materials during the exercises to increase the odds of individually answering questions. If it is appropriate, teachers may copy my short economic history included previously in this document as a handout for students to refer to during the exercises. Otherwise, they should be able to use the textbook or notes for reference.

While implementing the exercises, teachers should convey that some questions will seem unanswerable – that they are designed to activate (1) imagination, (2) critical thinking and (3) prior knowledge. Inferring is an art form. There is often no right answer, but there are some

answers that are better than other answers and some answers can be downright wrong -- it depends on the reasoning process and the ability of the student to justify his or her response.

In this document, the questions are written with my ideas for possible answers. Teachers are encouraged to add to both questions and possible answers. If teachers find my questions unworkable in their classrooms, I encourage them to replace my questions with theirs. I also encourage teachers to add to the base of data and inference exercises according to their own interests and relevance to their curriculum.

Lesson One: Short Inference Exercises (SIE) (45 Minutes, tables are in handout)

SIE are delivered in one handout entitled Short Inference Exercises. Teachers should go through them one by one with their students, allowing students time to respond to the questions for each SIE before walking them through the process of making inferences.

The teacher should use this opportunity to model using reason and prior knowledge to justify possible responses and perhaps show written models of such a reasoning process.

Lesson Plan One: Making Inferences	(45 Minutes)
Lesson Objectives	Students will: → Internalize the reasoning behind making inferences from data sets → Practice making inferences from data sets
Modeling (10 min)	SIE1
Guided Practice (10 min)	SIE2
Independent Practice (25 min)	SIE3, SIE4

(SIE1) Military Participation Ratio, Statistical Summary of American Wars (LSU 2004)

1. Which of these wars required the most participation of the total population?
   (WWII)

2. Which of these wars probably affected the American population the most?
   (The Civil War, in particular the South)

3. Which statistic made it easiest to make these conclusions?
   (Ratio)

(SIE2) U.S. Net Income of Farm Operators from Farming, 1910-1941

1. What could account for such an increase in farmer's income from 1915-1919?
   (To supply European countries and create rations for the military during WWI, the U.S. Government created price floors for farm products, which dramatically increased production and profits.)

2. Why was there such a dramatic drop in the net income of farm operators from 1920-1921?
   (Demobilization called for the end of the price floors set by the Government.)

3. Based on this data, which year was the peak of the Great Depression?
   (1932)

(SIE3) U.S. Laborers' Average Hourly Rate of Wages, Weighted 1863-1891

1. What happened to wages between 1873 and 1880? What might have had that effect?
   (Students should discuss the increased immigration after and the migration of freed slaves and the Crisis of 1877)

2. What was life like on these wages?
   (Life was difficult. Most laborers lived in tenements, which were apartment buildings with

terrible conditions: many people per room, shared bathrooms, no windows or ventilation. Some lived in company towns such as Pullman.)

3. How did laborers react to these wages and their lifestyle?
(Many joined unions and protested; many became socialist or voted for progressive politicians.)

(SIE4) US Earnings Yield of All Common Stocks on the New York Stock Exchange 1871-1938

1. Based on this data, what was the overall economic effect of the period of demobilization after WWII? Why does this occur?
(1921-1922, discharged soldiers add to demand for jobs thus driving down prices. Cuts in defense contracts have a ripple effect through the economy.)

2. What single year had the highest earnings yield? Why might this be?
(1916, the period of American involvement in WWI meant that USA would sell supplies and loan money to the U.S. Allies as well as create demand from supplying our own military. Meanwhile, European business was on the downfall. Direct foreign investment in the United States would have been popular.)

3. Based on this data, what was the worst year of the Great Depression?
(1932)

4. Why is the decade of the 1920s referred to as the Roaring 20s?
(Overall economic prosperity, booming stock markets)

Lesson Two: Inference Exercises (15-20 minutes each, tables are in handouts)

The Inference Exercises Lesson Plan is repeatable for each Inference Exercise.

Inference Exercises can also be implemented as brief activities, perhaps as a warm up or for homework to be discussed the next day. There is one handout per IE, as the accompanying tables are quite large.

Once again, some questions are at the knowledge level but many are higher level thinking questions that have a variety of possible answers and depend on proper reasoning. The goal of the exercises should be to develop the reasoning skills behind making insightful inferences.

Once again, unless students have a large amount of prior knowledge they should be allowed reference materials, such as the textbook, notes, or my written economic history printed above.

Teachers should encourage debate amongst students with different answers, perhaps by putting them in groups to review written responses. Use this opportunity to force verbalizing reasoning processes in a persuasive manner.

Lesson Plan Two: Making More Inferences	(45 Minutes Each)
Lesson Objectives	Students will: → Internalize the reasoning behind making inferences from data sets → Practice making inferences from data sets → Review or Preview topics in US History → Practice working in groups
Introduction (5 min)	Handout the Inference Exercise with a statement on why that particular topic is important.
Independent Inference Making with Prior Knowledge (5 min)	Allow students to write a preliminary response to the questions without being able to access reference materials (notes, textbook, economic history written above)

Independent Inference Making with Reference Materials (15 min)	Allow students to write new responses to the questions while having access to reference materials.
Share with Group (10 min)	Allow students to get into groups three or four, with no more than five people. Have them share their responses.
Share with Class (10 min)	Allow groups to share with class. Pose questions to help them think through their answers. Correct any incorrect inferences.

(IE1) U.S. Domestic Exports of Crude Foodstuffs 07/1905-06/1956

1. What happened to food exports as a result of World War I and World War II?
   (Food exports surged because many fertile areas of Europe were not worked)

2. What month did we begin exporting food to Britain and France?
   (July of 1914)

3. What change in policy would have caused such a drastic increase?
   (Government allows trade with Allied Powers)

4. By when did European farmers begin to provide food to their own populations?
   (1922)

5. What do you believe caused the lag between the end of the war and food production?
   (Demobilization, reconstruction, economic healing to supply appropriate wages for demand.)

6. When does the demand for farm goods start to go down because of the Great Depression?
   (1929)

7. Which two years of the Great Depression were worst for farmers? Why were these worst?
   (1932-1933, Dust Bowl)

8. What event seemed to bring the American farmers out of the Great Depression? What policies caused the dramatic surge in exports of foodstuffs?
   (The end of WWII, Marshall Plan, Japanese Occupation)

9. What years did the US provide aid to Europe as part of the Marshall Plan?
   (1947-1953)

(IE2) U.S. Quantity Index of Exports of Cotton 1879-1923

1. What would explain the steady increase in Cotton Exports from 1879 onwards?
   (Slow and steady industrialization of the South, former plantation land)

2. If we could look at the data on Cotton Exports before 1861, what would it look like in comparison to 1879?
   (Probably higher than 1879 before the South was uprooted by the Civil War)

3. What could explain the surge of Cotton Exports in 1915?
   (US involvement in WWI)

(IE3) U.S. Quantity Index of Exports of Iron and Steel, 1879-1923

1. What could explain the meager exports of Iron and Steel in 1879?
   (Steel became mass produced after the Bessemer process was introduced 1855. The industry would have still been very small.)

2. What would explain the steady growth of Iron and Steel exports from 1879-WWI?
   (Steel grew as an industry and more and more uses for steel were found.)

3. What would explain the surge in grown of Iron and Steel exports in 1915?
   (US involvement in WWI)

4. Based on this data, when do you think the economic slump from demobilization occurred?
   (1921-1922)

(IE4) U.S. Quantity Index of Exports of Petroleum, 1879-1923

1. What could explain the meager exports of oil in 1879?
   (Oil became mass produced after Pennsylvania Oil was exploited for multiple uses in the 1860s. The industry would have still been very small.)

2. What would explain the steady growth of oil exports from 1879-WWI?
   (Oil exports grew as the industry grew and more and more uses for oil were found.)

3. Which company would be responsible for most of this data trend?
   (Standard Oil)

(IE5) U.S. Federal Budget Receipts, Income Tax 05/1910-12/1953

1. What could explain the giant increase in tax revenues from 1917 to 1918?
   (The passage of the Income Tax, the 16th amendment to the Constitution, formally authorizing a congressional income tax on all American citizens which states "The Congress shall have power to lay and collect taxes on incomes, from whatever source derived, without apportionment among the several states, and without regard to any census or enumeration.")

2. What kind of Government do you believe was in power during the Roaring 20s?
   (Harding, Coolidge, and Hoover were Republicans who oversaw pro-business policies that encouraged cutting government spending and taxes)

3. What accounted for the dramatic increases in spending from 1941 to 1945?
   (U.S. entry into WWII)

4. Based on post-WWII statistics, what generalization could be made about the lasting impact of the New Deal and WWII in regards to government size and power?
   (Government size and power retreated very little after WWII)

(IE6) U.S. Federal Government Purchases of Goods and Services, National Defense 1946-1965

1. What happened immediately after WWII?
   (Defense expenditures went down for a few years)

2. According to this data, when do you believe the Cold War started?
   (1951)

3. According to this data, when do you believe the Cold War peaked?
   (1962)

(IE7) U.S. Rates on Customer Loans, New York City 01/1919-02/1939

1. Based on this data, why do you believe interest rates are lowered?
   (To encourage lending, borrowing, and investment during hard times)

2. Why are interest rates raised to high levels?
   (When bankers want to slow down the rate of lending, generally to slow down the economy and prevent inflation, for instance during the period at the end of WWI.)

3. What kind of products do you believe they were encouraging people to buy?
   (Automobiles, Radios, Home Appliances)

4. Why did they have to make their loans have so little interest?
   (During the Depression people had low expectations for the future and were reluctant to take out loans)

Lesson Three: Using Illustrative Statistics (90 minutes)

Lesson Plan Three: Using Illustrative Statistics	(90 minutes)
Lesson Objectives	Students will: → Understand the use of statistics in creating an authoritative voice → Write a paragraph with an authoritative voice → Utilize data to create a clear and purposeful table → Utilize data to create a statistical index
Interest Initiating Activity (5 min)	Dialogue: What makes a good table? What makes statistics powerful? What makes a good graph?
Vocabulary Development Activity (10 min)	On the board or overhead make a graphic organizer depicting the words Table, Graph, Statistic, and Statistical Index, Illustrate, Validity, Authoritative Voice.
Personal Applications Processing Activity (10 min)	Journal Entry: When you read statistics, how do you feel? What classes use statistics?
Current Applications Processing Activity (5 min)	Demonstrate to students how using statistics can relay an authoritative voice. Create your own statement or use the following from Howard Zinn's *People's History of the United States: "*The strikers now multiplied; joined by young boys and men from the mills and factories (Pittsburgh had 33 iron mills, 73 glass factories, 29 oil refineries, 158 coal mines)" (Zinn 2005).

Unit Presentation (15 min)	Teachers should model the creation of a table, graph, and statistical index based on this statement "US Farmers' Exports Benefited from WWI."
	→ Model the creation of a clear and purposeful table
	    (See Table 1 Below)
	→ Model the creation of a clear and purposeful graph
	    (See Figure 1 Below)
	→ Model the creation of a Statistical Index (See Table 1 Below)

Processing Activity (25 min)	Students should create their own table, graph, and statistical index to support the following claim: "Everyone Suffered During the Great Depression." They should use data from at least three tables from the IE and SIE from the years 1925-1935.
Assessment (20 min)	In class, students should write an authoritative paragraph arguing that "Everyone Suffered During the Great Depression," using their tables, graphs, and statistical index. They should turn in the table, graph, index, and paragraph.

Table 1

U.S. Export of Cotton, 1914-1920

Quarter	1914	1915	1916	1917	1918	1919	1920
1	84.3	189.3	169.3	160.9	120.2	156.1	217.5
2	89.4	151.8	195.6	161.3	122.1	148.5	229.3
3	69.2	166.9	177.2	140.9	109	156.8	152.3
4	106.5	160.4	178.5	194.4	129.4	186.8	165.2
Yearly Total	349.4	668.4	720.6	657.5	480.7	648.2	764.3

indexed at 1913 = 100

U.S. Export of Foodstuffs, 1914-1920

Month	1914	1915	1916	1917	1918	1919	1920
1	9.08	49.79	32.38	58.74	24.16	48.54	44.4
2	8.55	57.98	35.89	38.43	29.29	36.69	34.7
3	7.17	52.13	39.48	38.26	37.16	46.98	49.82
4	6.33	59.41	36.45	55.41	39.75	66.17	38.67
5	10.08	38.75	36.13	55.91	30.15	72.42	67.8
6	11.05	25.95	22.8	66.76	19.14	80.68	64.3
7	27.94	21.85	22.04	29.72	27.1	37.95	101.15
8	28.61	27.7	33.8	36.68	55.92	60	104.23
9	41.86	35.71	35.14	17.66	84.4	66.94	108.17
10	36.22	33.64	38.1	35.92	66.53	55.86	118.68
11	36.89	28.98	44.05	36.54	55.57	58.64	94.23
12	51.62	29.74	45.12	38.74	78.38	47.47	91.82
Yearly Total	275.4	461.63	421.38	508.77	547.55	678.34	917.97

in millions of dollars

Farm Export Index, 1914-1920

Index Value	1914	1915	1916	1917	1918	1919	1920
Cotton *.2	69.88	133.68	144.12	131.5	96.14	129.64	152.86
Foodstuffs *.8	220.32	369.304	337.104	407.016	438.04	542.672	734.376
Export Index	290.2	502.984	481.224	538.516	534.18	672.312	887.236
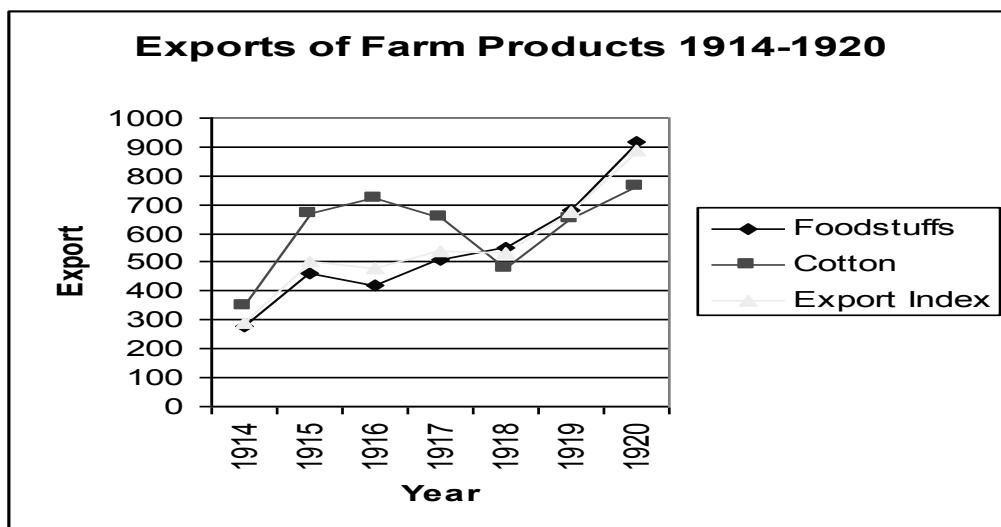
Figure 1

U.S. Domestic Exports of Crude Foodstuffs 07/1905-06/1956
National Bureau of Economic History

Questions for Inference

1. What happened to food exports as a result of World War I and World War II?

2. What month previous to World War I did we begin exporting food to Britain and France?

3. What change in policy would have caused such a drastic increase?

4. By when did European farmers begin to provide food to their own populations?

5. What do you believe caused the lag between the end of the war and food production?

6. When does the demand for farm goods start to go down because of the Great Depression?

7. Which two years of the Great Depression were worst for farmers? Why were these worst?

8. What event seemed to bring the American farmers out of the Great Depression? What policies caused the dramatic surge in exports of foodstuffs?

9. What years did the U.S. provide aid to Europe as part of the Marshall Plan?

1906	1	25.8900	1907	1	15.0800	1908	1	22.3200	1909	1	11.9200
1906	2	19.0900	1907	2	14.2400	1908	2	19.5100	1909	2	9.13000
1906	3	16.1800	1907	3	14.2600	1908	3	12.0700	1909	3	9.75000
1906	4	13.7700	1907	4	13.6600	1908	4	8.88000	1909	4	8.47000
1906	5	10.5300	1907	5	15.0300	1908	5	8.82000	1909	5	6.21000
1906	6	8.09000	1907	6	11.8000	1908	6	8.13000	1909	6	3.72000
1906	7	7.70000	1907	7	11.0900	1908	7	8.24000	1909	7	6.46000
1906	8	12.0800	1907	8	12.2400	1908	8	15.4200	1909	8	9.89000
1906	9	14.8400	1907	9	15.5800	1908	9	18.2000	1909	9	11.1400
1906	10	17.5100	1907	10	22.2800	1908	10	18.4700	1909	10	13.4000
1906	11	16.0500	1907	11	22.6500	1908	11	13.7000	1909	11	14.3000
1906	12	15.2100	1907	12	25.4700	1908	12	14.4400	1909	12	12.5300
1910	1	9.80000	1911	1	12.1500	1912	1	11.0700	1913	1	20.8300
1910	2	8.06000	1911	2	10.1800	1912	2	9.48000	1913	2	16.3400
1910	3	7.82000	1911	3	10.2300	1912	3	8.36000	1913	3	13.9100
1910	4	7.25000	1911	4	7.38000	1912	4	5.05000	1913	4	13.2100
1910	5	5.46000	1911	5	7.11000	1912	5	3.64000	1913	5	11.0100
1910	6	3.52000	1911	6	7.55000	1912	6	3.25000	1913	6	9.02000
1910	7	4.19000	1911	7	8.57000	1912	7	3.86000	1913	7	12.9400
1910	8	6.36000	1911	8	10.4900	1912	8	9.48000	1913	8	26.7300
1910	9	7.79000	1911	9	11.0500	1912	9	19.2700	1913	9	14.8400
1910	10	10.0100	1911	10	9.94000	1912	10	25.0800	1913	10	11.7600
1910	11	9.53000	1911	11	8.00000	1912	11	20.8900	1913	11	8.88000
1910	12	10.8200	1911	12	10.7400	1912	12	18.8100	1913	12	9.98000

1914	1	9.08000	1915	1	49.7900	1916	1	32.3800	1917	1	58.7400
1914	2	8.55000	1915	2	57.9800	1916	2	35.8900	1917	2	38.4300
1914	3	7.17000	1915	3	52.1300	1916	3	39.4800	1917	3	38.2600
1914	4	6.33000	1915	4	59.4100	1916	4	36.4500	1917	4	55.4100
1914	5	10.0800	1915	5	38.7500	1916	5	36.1300	1917	5	55.9100
1914	6	11.0500	1915	6	25.9500	1916	6	22.8000	1917	6	66.7600
1914	7	27.9400	1915	7	21.8500	1916	7	22.0400	1917	7	29.7200
1914	8	28.6100	1915	8	27.7000	1916	8	33.8000	1917	8	36.6800
1914	9	41.8600	1915	9	35.7100	1916	9	35.1400	1917	9	17.6600
1914	10	36.2200	1915	10	33.6400	1916	10	38.1000	1917	10	35.9200
1914	11	36.8900	1915	11	28.9800	1916	11	44.0500	1917	11	36.5400
1914	12	51.6200	1915	12	29.7400	1916	12	45.1200	1917	12	38.7400
1918	1	24.1600	1919	1	48.5400	1920	1	44.4000	1921	1	75.4400
1918	2	29.2900	1919	2	36.6900	1920	2	34.7000	1921	2	60.7700
1918	3	37.1600	1919	3	46.9800	1920	3	49.8200	1921	3	52.7100
1918	4	39.7500	1919	4	66.1700	1920	4	38.6700	1921	4	50.2500
1918	5	30.1500	1919	5	72.4200	1920	5	67.8000	1921	5	59.3000
1918	6	19.1400	1919	6	80.6800	1920	6	64.3000	1921	6	62.7800
1918	7	27.1000	1919	7	37.9500	1920	7	101.150	1921	7	58.5200
1918	8	55.9200	1919	8	60.0000	1920	8	104.230	1921	8	105.880
1918	9	84.4000	1919	9	66.9400	1920	9	108.170	1921	9	67.8300
1918	10	66.5300	1919	10	55.8600	1920	10	118.680	1921	10	40.0000
1918	11	55.5700	1919	11	58.6400	1920	11	94.2300	1921	11	30.0400
1918	12	78.3800	1919	12	47.4700	1920	12	91.8200	1921	12	28.7400
1922	1	31.1000	1923	1	24.2200	1924	1	13.8100	1925	1	25.8800
1922	2	27.8100	1923	2	27.1700	1924	2	13.9200	1925	2	23.4900
1922	3	34.5300	1923	3	19.3600	1924	3	14.9800	1925	3	31.1000
1922	4	31.1700	1923	4	17.7400	1924	4	13.3400	1925	4	36.1900
1922	5	34.1500	1923	5	26.0000	1924	5	10.6400	1925	5	33.6200
1922	6	41.0000	1923	6	21.3400	1924	6	15.0100	1925	6	21.8800
1922	7	41.9600	1923	7	19.5100	1924	7	12.8200	1925	7	22.5500
1922	8	61.3100	1923	8	23.9000	1924	8	31.7300	1925	8	28.5600
1922	9	55.1500	1923	9	27.1700	1924	9	66.0600	1925	9	34.6300
1922	10	40.8000	1923	10	21.7500	1924	10	101.820	1925	10	19.3100
1922	11	33.6200	1923	11	14.4600	1924	11	58.9400	1925	11	19.4800
1922	12	26.0200	1923	12	14.8700	1924	12	39.6200	1925	12	21.1900
1926	1	15.8400	1927	1	24.4100	1928	1	18.0800	1929	1	29.6700
1926	2	12.1700	1927	2	18.7600	1928	2	13.3000	1929	2	24.0800
1926	3	15.6000	1927	3	19.9800	1928	3	14.8200	1929	3	21.6300
1926	4	14.5700	1927	4	31.5100	1928	4	13.2600	1929	4	15.8100
1926	5	25.1600	1927	5	30.6800	1928	5	19.7400	1929	5	21.2100
1926	6	21.0900	1927	6	25.2100	1928	6	17.2400	1929	6	14.5300
1926	7	33.9100	1927	7	21.9100	1928	7	14.2200	1929	7	20.2600
1926	8	50.0900	1927	8	46.7700	1928	8	29.3100	1929	8	28.4400
1926	9	46.4900	1927	9	69.4300	1928	9	42.3600	1929	9	29.9500
1926	10	35.6600	1927	10	62.4200	1928	10	52.3800	1929	10	24.1100
1926	11	37.4600	1927	11	46.7200	1928	11	31.5800	1929	11	22.5600
1926	12	27.0400	1927	12	23.3000	1928	12	27.6800	1929	12	17.3600
1930	1	17.7100	1931	1	8.49000	1932	1	8.19000	1933	1	4.66000
1930	2	13.2500	1931	2	7.32000	1932	2	8.49000	1933	2	3.25000
1930	3	9.32000	1931	3	9.58000	1932	3	8.51000	1933	3	3.52000
1930	4	9.36000	1931	4	8.63000	1932	4	9.79000	1933	4	2.51000
1930	5	12.4500	1931	5	10.5500	1932	5	8.62000	1933	5	3.02000
1930	6	13.3500	1931	6	11.1200	1932	6	6.90000	1933	6	2.70000
1930	7	16.6600	1931	7	14.0000	1932	7	5.51000	1933	7	3.08000
1930	8	24.1600	1931	8	9.98000	1932	8	5.96000	1933	8	3.06000
1930	9	18.1800	1931	9	10.2900	1932	9	5.86000	1933	9	3.40000
1930	10	15.0500	1931	10	13.9700	1932	10	8.61000	1933	10	5.04000
1930	11	15.5800	1931	11	13.7500	1932	11	8.61000	1933	11	6.65000
1930	12	13.4600	1931	12	9.40000	1932	12	4.37000	1933	12	7.46000

1934	1	7.29000	1935	1	4.09000	1936	1	4.35000	1937	1	3.60000
1934	2	6.89000	1935	2	3.90000	1936	2	4.02000	1937	2	3.52000
1934	3	6.14000	1935	3	3.68000	1936	3	5.09000	1937	3	4.10000
1934	4	5.35000	1935	4	3.20000	1936	4	4.95000	1937	4	4.15000
1934	5	3.99000	1935	5	3.72000	1936	5	4.64000	1937	5	3.58000
1934	6	3.02000	1935	6	4.01000	1936	6	4.40000	1937	6	4.42000
1934	7	3.68000	1935	7	5.22000	1936	7	3.77000	1937	7	5.92000
1934	8	5.30000	1935	8	4.80000	1936	8	5.72000	1937	8	13.1200
1934	9	4.07000	1935	9	7.07000	1936	9	5.70000	1937	9	9.98000
1934	10	5.26000	1935	10	7.97000	1936	10	7.49000	1937	10	17.6200
1934	11	4.41000	1935	11	5.92000	1936	11	4.37000	1937	11	15.1600
1934	12	3.62000	1935	12	5.17000	1936	12	3.64000	1937	12	19.3200
1938	1	24.4900	1939	1	16.4900	1940	1	7.26000	1941	1	2.89000
1938	2	26.0800	1939	2	11.4000	1940	2	8.78000	1941	2	2.84000
1938	3	20.8300	1939	3	12.2900	1940	3	8.18000	1941	3	4.27000
1938	4	25.6400	1939	4	9.81000	1940	4	6.19000	1941	4	3.96000
1938	5	34.1400	1939	5	10.8100	1940	5	4.00000	1941	5	8.39000
1938	6	20.9900	1939	6	6.03000	1940	6	6.48000	1941	6	5.37000
1938	7	24.5500	1939	7	4.69000	1940	7	7.72000	1941	7	7.29000
1938	8	22.3500	1939	8	8.38000	1940	8	5.82000	1941	8	6.76000
1938	9	14.2500	1939	9	7.48000	1940	9	4.98000	1941	9	10.3800
1938	10	12.5000	1939	10	10.2100	1940	10	7.52000	1941	10	13.2000
1938	11	12.0400	1939	11	5.39000	1940	11	3.60000	1941	11	9.32000
1938	12	11.1200	1939	12	7.78000	1940	12	3.49000	1941	12	8.91000
1942	1	6.20000	1943	1	6.03000	1944	1	10.5600	1945	1	14.0000
1942	2	3.18000	1943	2	7.40000	1944	2	12.5600	1945	2	17.5700
1942	3	4.85000	1943	3	8.37000	1944	3	12.5700	1945	3	16.3800
1942	4	5.91000	1943	4	8.74000	1944	4	10.7600	1945	4	19.4300
1942	5	5.95000	1943	5	8.46000	1944	5	12.4500	1945	5	20.5400
1942	6	5.43000	1943	6	9.41000	1944	6	10.0100	1945	6	29.8500
1942	7	5.97000	1943	7	9.23000	1944	7	9.91000	1945	7	31.5900
1942	8	6.32000	1943	8	7.50000	1944	8	10.7900	1945	8	33.8600
1942	9	4.43000	1943	9	8.21000	1944	9	7.84000	1945	9	54.4100
1942	10	4.65000	1943	10	10.1100	1944	10	9.54000	1945	10	65.7200
1942	11	5.51000	1943	11	9.25000	1944	11	13.0900	1945	11	62.2000
1942	12	9.44000	1943	12	16.3500	1944	12	13.7300	1945	12	66.5500
1946	1	70.2500	1947	1	100.800	1948	1	99.1400	1949	1	120.750
1946	2	58.3000	1947	2	101.190	1948	2	118.740	1949	2	130.550
1946	3	62.0500	1947	3	117.350	1948	3	104.260	1949	3	144.880
1946	4	48.6100	1947	4	117.950	1948	4	89.7400	1949	4	98.7500
1946	5	34.6600	1947	5	121.780	1948	5	74.2400	1949	5	139.050
1946	6	79.1900	1947	6	93.5400	1948	6	81.3100	1949	6	111.500
1946	7	53.9900	1947	7	125.560	1948	7	111.470	1949	7	98.5200
1946	8	53.3400	1947	8	138.000	1948	8	138.850	1949	8	124.500
1946	9	39.1200	1947	9	105.140	1948	9	107.220	1949	9	102.940
1946	10	29.0100	1947	10	103.660	1948	10	127.680	1949	10	83.8400
1946	11	51.3400	1947	11	105.410	1948	11	96.5400	1949	11	94.6600
1946	12	68.3500	1947	12	118.390	1948	12	116.620	1949	12	91.8300
1950	1	64.4700	1951	1	79.2100	1952	1	128.650	1953	1	109.380
1950	2	65.8600	1951	2	114.320	1952	2	133.460	1953	2	86.8800
1950	3	61.0200	1951	3	124.000	1952	3	177.190	1953	3	106.260
1950	4	62.7000	1951	4	163.560	1952	4	138.350	1953	4	82.5400
1950	5	55.0200	1951	5	137.880	1952	5	151.310	1953	5	75.5100
1950	6	58.2800	1951	6	135.780	1952	6	103.200	1953	6	68.6200
1950	7	57.3200	1951	7	105.050	1952	7	73.0900	1953	7	82.1200
1950	8	56.6200	1951	8	118.190	1952	8	79.8100	1953	8	73.4400
1950	9	60.2500	1951	9	106.400	1952	9	80.2100	1953	9	82.1000
1950	10	65.9800	1951	10	98.2500	1952	10	97.1900	1953	10	70.1500
1950	11	72.1100	1951	11	109.340	1952	11	89.4500	1953	11	69.6600
1950	12	80.1200	1951	12	109.200	1952	12	117.360	1953	12	55.4600

1954	1	45.2300	1955	1	75.4800
1954	2	53.3000	1955	2	82.3200
1954	3	55.8400	1955	3	96.5400
1954	4	65.7900	1955	4	56.2400
1954	5	73.4300	1955	5	63.2300
1954	6	64.6500	1955	6	86.6500
1954	7	65.4900	1955	7	96.5100
1954	8	55.6400	1955	8	85.5100
1954	9	46.3500	1955	9	70.2500
1954	10	64.1500	1955	10	62.8200
1954	11	65.8600	1955	11	71.4200
1954	12	82.2000	1955	12	82.9400

Table 2: NBER Series 07001—Originally taken from the following sources: 1905-June 1914: Commerce and Finance, Monthly Summary July 1906 and successive issues; July 1914-1941: Foreign Commerce, Monthly Summary (Part 2 after March 1921); 1942 and thereafter: survey of Current Business.

U.S. Quantity Index of Exports of Cotton FIRST, 1879-FOURTH, 1923

Questions for Inference

1. What would explain the steady increase in Cotton Exports from 1879 onwards?

2. If we could look at the data on Cotton Exports before 1861, what would it look like in comparison to 1879?

3. What could explain the surge of Cotton Exports in 1915?

1879	1	20.9000	1880	1	12.8000	1881	1	22.8000	1882	1	19.2000
1879	2	23.5000	1880	2	16.3000	1881	2	27.3000	1882	2	25.7000
1879	3	15.7000	1880	3	18.8000	1881	3	23.0000	1882	3	21.8000
1879	4	21.1000	1880	4	25.4000	1881	4	22.1000	1882	4	21.1000
1883	1	22.0000	1884	1	20.5000	1885	1	27.4000	1886	1	31.3000
1883	2	22.0000	1884	2	21.8000	1885	2	25.8000	1886	2	31.8000
1883	3	21.4000	1884	3	17.7000	1885	3	28.1000	1886	3	33.1000
1883	4	21.2000	1884	4	21.3000	1885	4	24.9000	1886	4	31.2000
1887	1	32.4000	1888	1	22.6000	1889	1	20.4000	1890	1	16.9000
1887	2	25.5000	1888	2	24.7000	1889	2	19.6000	1890	2	21.5000
1887	3	25.9000	1888	3	18.4000	1889	3	18.6000	1890	3	20.4000
1887	4	31.1000	1888	4	17.6000	1889	4	18.5000	1890	4	26.9000
1891	1	27.7000	1892	1	33.3000	1893	1	23.6000	1894	1	32.4000
1891	2	31.6000	1892	2	28.0000	1893	2	24.2000	1894	2	32.5000
1891	3	28.3000	1892	3	26.2000	1893	3	29.3000	1894	3	34.0000
1891	4	26.5000	1892	4	25.6000	1893	4	30.2000	1894	4	31.7000
1895	1	27.8000	1896	1	36.6000	1897	1	48.4000	1898	1	48.9000
1895	2	36.9000	1896	2	50.6000	1897	2	59.5000	1898	2	53.6000
1895	3	35.4000	1896	3	51.8000	1897	3	47.1000	1898	3	60.9000
1895	4	33.4000	1896	4	44.1000	1897	4	36.1000	1898	4	59.6000
1899	1	77.6000	1900	1	67.8000	1901	1	40.1000	1902	1	96.6000
1899	2	75.5000	1900	2	49.7000	1901	2	70.5000	1902	2	89.9000
1899	3	61.8000	1900	3	39.3000	1901	3	82.7000	1902	3	86.7000
1899	4	66.6000	1900	4	33.1000	1901	4	64.9000	1902	4	71.4000
1903	1	92.9000	1904	1	54.4000	1905	1	110.800	1906	1	106.500
1903	2	77.2000	1904	2	43.0000	1905	2	138.400	1906	2	99.7000
1903	3	47.9000	1904	3	84.1000	1905	3	134.800	1906	3	79.4000
1903	4	44.6000	1904	4	115.900	1905	4	120.000	1906	4	67.9000

1907	1	56.4000	1908	1	36.9000	1909	1	69.6000	1910	1	45.2000
1907	2	45.6000	1908	2	55.0000	1909	2	84.3000	1910	2	72.8000
1907	3	46.6000	1908	3	61.6000	1909	3	78.2000	1910	3	72.6000
1907	4	37.1000	1908	4	58.3000	1909	4	54.5000	1910	4	59.3000
1911	1	71.2000	1912	1	104.400	1913	1	99.5000	1914	1	84.3000
1911	2	83.6000	1912	2	107.000	1913	2	105.900	1914	2	89.4000
1911	3	80.1000	1912	3	93.1000	1913	3	95.6000	1914	3	69.2000
1911	4	98.0000	1912	4	90.3000	1913	4	98.9000	1914	4	106.500
1915	1	189.300	1916	1	169.300	1917	1	160.900	1918	1	120.200
1915	2	151.800	1916	2	195.600	1917	2	161.300	1918	2	122.100
1915	3	166.900	1916	3	177.200	1917	3	140.900	1918	3	109.000
1915	4	160.400	1916	4	178.500	1917	4	194.400	1918	4	129.400
1919	1	156.100	1920	1	217.500	1921	1	96.3000	1922	1	94.4000
1919	2	148.500	1920	2	229.300	1921	2	96.7000	1922	2	138.300
1919	3	156.800	1920	3	152.300	1921	3	121.400	1922	3	133.900
1919	4	186.800	1920	4	165.200	1921	4	115.900	1922	4	121.200
1923	1	114.900									
1923	2	107.800									
1923	3	98.8000									
1923	4	99.9000									

Table 3: NBER Series 07054—Originally taken from and unpublished source: See Robert E. Lipsey, Price and Quantity Trends in the Foreign Trade of the United States, National Bureau of Economic Research, 1963, pp. 276-278.

U.S. Quantity Index of Exports of Iron and Steel,
Lipsey FIRST, 1879-FOURTH, 1923

Questions for Inference

1. What could explain the meager exports of Iron and Steel in 1879?

2. What would explain the steady growth of Iron and Steel exports from 1879-WWI?

3. What would explain the surge in grown of Iron and Steel exports in 1915?

4. Based on this data, when do you think the economic slump from demobilization occurred?

1879	1	3.60000	1880	1	3.30000	1881	1	4.20000	1882	1	5.60000
1879	2	4.00000	1880	2	3.60000	1881	2	4.90000	1882	2	5.00000
1879	3	3.00000	1880	3	3.60000	1881	3	5.10000	1882	3	6.20000
1879	4	3.10000	1880	4	3.90000	1881	4	5.30000	1882	4	6.10000
1883	1	5.90000	1884	1	5.50000	1885	1	3.90000	1886	1	3.60000
1883	2	6.70000	1884	2	5.70000	1885	2	4.30000	1886	2	4.40000
1883	3	5.80000	1884	3	4.60000	1885	3	4.40000	1886	3	4.80000
1883	4	6.10000	1884	4	4.20000	1885	4	4.50000	1886	4	4.50000
1887	1	4.60000	1888	1	5.30000	1889	1	6.60000	1890	1	7.30000
1887	2	5.00000	1888	2	5.90000	1889	2	7.70000	1890	2	9.20000
1887	3	4.60000	1888	3	6.10000	1889	3	7.90000	1890	3	8.30000
1887	4	5.30000	1888	4	6.00000	1889	4	8.30000	1890	4	9.60000
1891	1	8.50000	1892	1	8.10000	1893	1	9.00000	1894	1	8.60000
1891	2	9.80000	1892	2	8.60000	1893	2	11.2000	1894	2	10.9000
1891	3	9.00000	1892	3	9.10000	1893	3	10.9000	1894	3	10.9000
1891	4	10.2000	1892	4	10.0000	1893	4	10.2000	1894	4	11.0000
1895	1	10.8000	1896	1	11.5000	1897	1	19.0000	1898	1	26.4000
1895	2	12.0000	1896	2	15.5000	1897	2	21.9000	1898	2	31.1000
1895	3	12.1000	1896	3	14.7000	1897	3	18.7000	1898	3	29.0000
1895	4	11.4000	1896	4	15.7000	1897	4	20.4000	1898	4	28.9000

1899	1	31.4000	1900	1	39.6000	1901	1	36.8000	1902	1	34.6000
1899	2	38.0000	1900	2	43.1000	1901	2	38.6000	1902	2	34.9000
1899	3	34.6000	1900	3	34.5000	1901	3	30.4000	1902	3	31.5000
1899	4	34.9000	1900	4	33.6000	1901	4	30.4000	1902	4	30.8000
1903	1	33.3000	1904	1	38.1000	1905	1	42.6000	1906	1	54.4000
1903	2	37.6000	1904	2	43.2000	1905	2	47.9000	1906	2	58.6000
1903	3	33.8000	1904	3	37.4000	1905	3	44.8000	1906	3	49.4000
1903	4	33.7000	1904	4	41.6000	1905	4	50.0000	1906	4	54.8000
1907	1	59.2000	1908	1	55.9000	1909	1	48.0000	1910	1	58.8000
1907	2	61.3000	1908	2	48.8000	1909	2	50.0000	1910	2	62.7000
1907	3	59.3000	1908	3	41.0000	1909	3	46.3000	1910	3	60.4000
1907	4	57.9000	1908	4	41.7000	1909	4	51.4000	1910	4	63.5000
1911	1	76.6000	1912	1	85.4000	1913	1	104.500	1914	1	89.1000
1911	2	84.8000	1912	2	94.4000	1913	2	107.100	1914	2	87.3000
1911	3	72.6000	1912	3	89.7000	1913	3	95.4000	1914	3	54.9000
1911	4	77.5000	1912	4	96.2000	1913	4	98.4000	1914	4	66.4000
1915	1	81.7000	1916	1	196.700	1917	1	216.300	1918	1	143.500
1915	2	134.600	1916	2	211.800	1917	2	226.600	1918	2	153.700
1915	3	153.500	1916	3	216.700	1917	3	180.600	1918	3	157.000
1915	4	189.300	1916	4	210.400	1917	4	198.900	1918	4	146.100
1919	1	166.900	1920	1	198.200	1921	1	244.600	1922	1	89.2000
1919	2	238.200	1920	2	219.400	1921	2	126.200	1922	2	113.500
1919	3	169.600	1920	3	202.300	1921	3	84.7000	1922	3	104.900
1919	4	178.000	1920	4	253.700	1921	4	86.5000	1922	4	113.600

Table 4: NBER Series 07056—Originally taken from an unpublished source: See Robert E. Lipsey, Price and Quantity Trends in the Foreign Trade of the United States, National Bureau of Economic Research, 1963, pp. 289-95.

US Quantity Index of Exports of Petroleum, Lipsey FIRST, 1879-FOURTH, 1923

Questions for Inference

1. What could explain the meager exports of Oil in 1879?

2. What would explain the steady growth of Oil exports from 1879-WWI?

3. Which company would be responsible for most of this data trend?

1879	1	10.2000	1880	1	16.5000	1881	1	13.8000	1882	1	18.8000
1879	2	17.1000	1880	2	11.3000	1881	2	23.2000	1882	2	27.3000
1879	3	26.3000	1880	3	20.4000	1881	3	30.9000	1882	3	26.3000
1879	4	24.7000	1880	4	14.8000	1881	4	26.7000	1882	4	19.9000
1883	1	19.0000	1884	1	17.2000	1885	1	19.8000	1886	1	23.0000
1883	2	26.4000	1884	2	22.9000	1885	2	26.1000	1886	2	26.6000
1883	3	27.2000	1884	3	27.5000	1885	3	28.5000	1886	3	29.3000
1883	4	23.2000	1884	4	27.0000	1885	4	23.2000	1886	4	26.4000
1887	1	22.6000	1888	1	22.6000	1889	1	26.5000	1890	1	21.3000
1887	2	27.8000	1888	2	22.9000	1889	2	28.7000	1890	2	29.1000
1887	3	30.6000	1888	3	29.7000	1889	3	38.1000	1890	3	40.0000
1887	4	27.0000	1888	4	28.7000	1889	4	31.3000	1890	4	35.6000
1891	1	24.7000	1892	1	28.5000	1893	1	31.3000	1894	1	37.1000
1891	2	30.1000	1892	2	32.8000	1893	2	39.4000	1894	2	38.9000
1891	3	35.8000	1892	3	33.6000	1893	3	44.5000	1894	3	42.5000
1891	4	31.2000	1892	4	38.9000	1893	4	42.3000	1894	4	44.6000
1895	1	36.5000	1896	1	38.5000	1897	1	39.3000	1898	1	44.3000
1895	2	38.0000	1896	2	43.3000	1897	2	45.0000	1898	2	48.5000
1895	3	39.2000	1896	3	46.1000	1897	3	50.7000	1898	3	51.5000
1895	4	45.2000	1896	4	47.3000	1897	4	50.5000	1898	4	41.2000
1899	1	37.4000	1900	1	42.0000	1901	1	42.3000	1902	1	46.0000
1899	2	46.8000	1900	2	43.1000	1901	2	51.1000	1902	2	51.1000
1899	3	50.6000	1900	3	51.5000	1901	3	55.6000	1902	3	47.7000

1899	4	45.9000	1900	4	46.0000	1901	4	54.3000	1902	4	51.2000
1903	1	36.8000	1904	1	42.5000	1905	1	52.6000	1906	2	59.1000
1903	2	44.1000	1904	2	49.8000	1905	2	57.9000	1906	3	61.5000
1903	3	47.1000	1904	3	53.5000	1905	3	65.7000	1906	4	62.1000
1903	4	48.8000	1904	4	52.0000	1905	4	58.7000			
1907	1	56.5000	1908	1	68.8000	1909	1	70.2000	1910	1	67.8000
1907	2	61.4000	1908	2	78.2000	1909	2	77.6000	1910	2	79.0000
1907	3	69.5000	1908	3	80.9000	1909	3	80.8000	1910	3	77.7000
1907	4	67.5000	1908	4	73.1000	1909	4	78.4000	1910	4	72.8000
1911	1	75.5000	1912	1	72.9000	1913	1	89.5000	1914	1	84.5000
1911	2	94.3000	1912	2	105.800	1913	2	99.7000	1914	2	112.900
1911	3	98.7000	1912	3	104.200	1913	3	103.100	1914	3	101.600
1911	4	83.0000	1912	4	91.4000	1913	4	108.800	1914	4	90.5000
1915	1	84.6000	1916	1	95.1000	1917	1	104.100	1918	1	106.100
1915	2	117.100	1916	2	106.800	1917	2	124.400	1918	2	115.200
1915	3	112.200	1916	3	132.800	1917	3	78.6000	1918	3	112.400
1915	4	95.1000	1916	4	97.2000	1917	4	121.400	1918	4	108.400
1919	1	114.200	1920	1	147.500	1921	1	145.200	1922	1	143.500
1919	2	131.600	1920	2	160.700	1921	2	115.300	1922	2	148.800
1919	3	106.600	1920	3	153.600	1921	3	102.800	1922	3	137.400
1919	4	131.900	1920	4	173.000	1921	4	140.800	1922	4	137.600
1923	1	163.000									
1923	2	170.800									
1923	3	170.700									
1923	4	167.800									

Table 5: NBER Series 07056—Originally taken from an unpublished source: See Robert E. Lipsey, Price and Quantity Trends in the Foreign Trade of the United States, National Bureau of Economic Research, 1963, pp. 284.

U.S. Federal Budget Receipts, Income Tax 05/1910-12/1953

Questions for Inference

1. What could explain the giant increase in tax revenues from 1917 to 1918?

2. What kind of Government do you believe was in power during the Roaring 20s?

3. What accounted for the dramatic increases in spending from 1941 to 1945?

4. Based on post-WWII statistics, what generalization could be made about the lasting impact of the New Deal and WWII in regards to government size and power?

1910	1	.	1911	1	0.100000	1912	1	0.400000	1913	1	0.300000
1910	2	.	1911	2	0.200000	1912	2	0.500000	1913	2	0.500000
1910	3	.	1911	3	0.600000	1912	3	0.400000	1913	3	1.00000
1910	4	.	1911	4	0.400000	1912	4	0.600000	1913	4	0.800000
1910	5	0.500000	1911	5	0.900000	1912	5	1.00000	1913	5	1.20000
1910	6	16.7000	1911	6	24.5000	1912	6	23.7000	1913	6	28.7000
1910	7	6.10000	1911	7	1.40000	1912	7	1.40000	1913	7	1.80000
1910	8	0.100000	1911	8	0.200000	1912	8	0.300000	1913	8	0.300000
1910	9	0.000000	1911	9	0.200000	1912	9	0.100000	1913	9	0.100000
1910	10	0.000000	1911	10	0.100000	1912	10	0.200000	1913	10	0.200000
1910	11	0.000000	1911	11	0.000000	1912	11	0.200000	1913	11	0.200000
1910	12	0.000000	1911	12	0.000000	1912	12	0.200000	1913	12	0.200000

1914	1	0.400000	1915	1	0.700000	1916	1	1.60000	1917	1	4.40000
1914	2	0.800000	1915	2	0.500000	1916	2	2.00000	1917	2	2.70000
1914	3	1.00000	1915	3	1.30000	1916	3	2.00000	1917	3	4.70000
1914	4	1.50000	1915	4	1.60000	1916	4	2.70000	1917	4	24.8000
1914	5	4.00000	1915	5	3.30000	1916	5	5.70000	1917	5	107.600
1914	6	60.8000	1915	6	63.2000	1916	6	95.9000	1917	6	195.600
1914	7	7.10000	1915	7	8.40000	1916	7	7.80000	1917	7	9.50000
1914	8	0.500000	1915	8	1.60000	1916	8	2.00000	1917	8	4.20000
1914	9	0.400000	1915	9	1.00000	1916	9	2.00000	1917	9	6.00000
1914	10	0.500000	1915	10	1.00000	1916	10	1.50000	1917	10	6.00000
1914	11	0.300000	1915	11	1.10000	1916	11	1.90000	1917	11	6.70000
1914	12	0.500000	1915	12	1.90000	1916	12	5.00000	1917	12	13.7000
1918	1	10.7000	1919	1	43.1000	1920	1	46.7000	1921	1	54.2000
1918	2	13.2000	1919	2	30.3000	1920	2	49.3000	1921	2	70.5000
1918	3	31.4000	1919	3	1129.80	1920	3	918.900	1921	3	727.500
1918	4	83.0000	1919	4	107.700	1920	4	105.800	1921	4	108.400
1918	5	342.100	1919	5	50.6000	1920	5	76.5000	1921	5	52.3000
1918	6	1786.60	1919	6	971.700	1920	6	744.400	1921	6	564.900
1918	7	497.500	1919	7	44.0000	1920	7	64.9000	1921	7	47.2000
1918	8	30.8000	1919	8	28.6000	1920	8	59.6000	1921	8	47.4000
1918	9	36.3000	1919	9	944.900	1920	9	716.200	1921	9	537.500
1918	10	30.1000	1919	10	34.9000	1920	10	55.7000	1921	10	48.0000
1918	11	28.8000	1919	11	45.6000	1920	11	61.2000	1921	11	35.4000
1918	12	61.9000	1919	12	905.300	1920	12	670.700	1921	12	524.000
1922	1	45.6000	1923	1	31.0000	1924	1	33.8000	1925	1	29.8000
1922	2	33.2000	1923	2	37.8000	1924	2	49.0000	1925	2	41.3000
1922	3	393.400	1923	3	463.100	1924	3	500.400	1925	3	441.500
1922	4	33.4000	1923	4	63.8000	1924	4	63.5000	1925	4	45.8000
1922	5	27.6000	1923	5	42.8000	1924	5	36.1000	1925	5	41.1000
1922	6	295.500	1923	6	367.200	1924	6	339.900	1925	6	377.500
1922	7	32.1000	1923	7	36.8000	1924	7	33.3000	1925	7	38.1000
1922	8	23.8000	1923	8	36.8000	1924	8	21.6000	1925	8	35.8000
1922	9	286.500	1923	9	343.000	1924	9	346.800	1925	9	361.200
1922	10	26.7000	1923	10	33.7000	1924	10	29.6000	1925	10	32.7000
1922	11	24.6000	1923	11	32.9000	1924	11	24.0000	1925	11	32.0000
1922	12	279.100	1923	12	336.200	1924	12	328.300	1925	12	356.000
1926	1	33.5000	1927	1	40.3000	1928	1	41.6000	1929	1	35.1000
1926	2	38.2000	1927	2	46.3000	1928	2	43.0000	1929	2	37.3000
1926	3	499.600	1927	3	516.500	1928	3	515.700	1929	3	601.400
1926	4	54.2000	1927	4	53.3000	1928	4	46.3000	1929	4	46.1000
1926	5	57.4000	1927	5	47.2000	1928	5	45.4000	1929	5	42.8000
1926	6	443.300	1927	6	474.500	1928	6	458.100	1929	6	555.300
1926	7	50.9000	1927	7	33.2000	1928	7	32.6000	1929	7	34.9000
1926	8	43.3000	1927	8	39.7000	1928	8	34.7000	1929	8	32.2000
1926	9	442.000	1927	9	446.000	1928	9	443.000	1929	9	542.300
1926	10	40.8000	1927	10	34.6000	1928	10	38.6000	1929	10	31.2000
1926	11	40.6000	1927	11	30.5000	1928	11	32.2000	1929	11	28.3000
1926	12	429.200	1927	12	440.000	1928	12	431.700	1929	12	516.500
1930	1	29.1000	1931	1	30.1000	1932	1	20.5000	1933	1	15.6000
1930	2	38.2000	1931	2	34.1000	1932	2	22.3000	1933	2	24.5000
1930	3	559.500	1931	3	334.800	1932	3	195.400	1933	3	180.700
1930	4	38.1000	1931	4	29.7000	1932	4	19.8000	1933	4	19.1000
1930	5	34.3000	1931	5	28.7000	1932	5	22.7000	1933	5	16.4000
1930	6	526.400	1931	6	295.800	1932	6	161.400	1933	6	146.600
1930	7	29.6000	1931	7	23.2000	1932	7	16.7000	1933	7	12.9000
1930	8	26.2000	1931	8	23.4000	1932	8	15.4000	1933	8	14.5000
1930	9	498.500	1931	9	267.300	1932	9	142.000	1933	9	135.800
1930	10	27.9000	1931	10	25.3000	1932	10	13.6000	1933	10	9.90000
1930	11	28.2000	1931	11	18.8000	1932	11	14.7000	1933	11	19.0000
1930	12	496.800	1931	12	257.400	1932	12	140.700	1933	12	133.300

1934	1	10.1000	1935	1	18.8000	1936	1	35.5000	1937	1	42.7000
1934	2	22.7000	1935	2	27.6000	1936	2	42.9000	1937	2	58.9000
1934	3	232.000	1935	3	326.300	1936	3	412.500	1937	3	701.500
1934	4	15.2000	1935	4	29.0000	1936	4	35.7000	1937	4	57.5000
1934	5	24.6000	1935	5	23.2000	1936	5	35.0000	1937	5	47.4000
1934	6	188.000	1935	6	253.700	1936	6	310.200	1937	6	549.300
1934	7	17.8000	1935	7	23.2000	1936	7	39.1000	1937	7	57.5000
1934	8	25.1000	1935	8	24.0000	1936	8	32.1000	1937	8	35.6000
1934	9	173.300	1935	9	230.600	1936	9	288.500	1937	9	501.600
1934	10	19.1000	1935	10	29.6000	1936	10	26.9000	1937	10	40.5000
1934	11	21.0000	1935	11	19.0000	1936	11	33.3000	1937	11	37.3000
1934	12	164.300	1935	12	228.400	1936	12	286.200	1937	12	486.900
1938	1	52.6000	1939	1	48.6000	1940	1	45.3000	1941	1	62.8000
1938	2	63.0000	1939	2	56.2000	1940	2	62.7000	1941	2	104.400
1938	3	724.400	1939	3	506.000	1940	3	665.500	1941	3	1207.50
1938	4	49.7000	1939	4	40.3000	1940	4	47.6000	1941	4	74.9000
1938	5	40.9000	1939	5	43.4000	1940	5	40.2000	1941	5	63.3000
1938	6	550.300	1939	6	356.200	1940	6	463.800	1941	6	916.200
1938	7	47.3000	1939	7	42.2000	1940	7	49.7000	1941	7	83.7000
1938	8	33.0000	1939	8	38.0000	1940	8	37.6000	1941	8	58.7000
1938	9	498.600	1939	9	329.000	1940	9	431.700	1941	9	779.900
1938	10	41.5000	1939	10	37.7000	1940	10	44.0000	1941	10	68.3000
1938	11	36.3000	1939	11	34.1000	1940	11	48.9000	1941	11	66.2000
1938	12	481.400	1939	12	319.100	1940	12	428.700	1941	12	767.100
1942	1	133.500	1943	1	306.500	1944	1	1727.00	1945	1	2422.10
1942	2	282.500	1943	2	379.600	1944	2	1746.80	1945	2	2921.90
1942	3	3082.60	1943	3	4732.00	1944	3	5911.40	1945	3	5818.40
1942	4	335.400	1943	4	1000.50	1944	4	2475.20	1945	4	2166.70
1942	5	216.100	1943	5	940.300	1944	5	2167.00	1945	5	2027.20
1942	6	2086.50	1943	6	3803.50	1944	6	5240.90	1945	6	4756.70
1942	7	273.100	1943	7	1254.90	1944	7	1247.10	1945	7	1743.00
1942	8	155.300	1943	8	1563.60	1944	8	1551.50	1945	8	1665.50
1942	9	2125.80	1943	9	4765.30	1944	9	5173.80	1945	9	4207.80
1942	10	205.700	1943	10	1303.50	1944	10	1240.20	1945	10	1592.70
1942	11	199.400	1943	11	1459.40	1944	11	1500.50	1945	11	1524.30
1942	12	1972.10	1943	12	5039.80	1944	12	4346.80	1945	12	3366.10
1946	1	2755.10	1947	1	2663.80	1948	1	3237.10	1949	1	2761.60
1946	2	2790.20	1947	2	3221.60	1948	2	3159.20	1949	2	2690.40
1946	3	4837.60	1947	3	4650.10	1948	3	5165.30	1949	3	5099.50
1946	4	1603.00	1947	4	1596.60	1948	4	1857.90	1949	4	1308.20
1946	5	1407.40	1947	5	1618.70	1948	5	1785.30	1949	5	1543.70
1946	6	3392.10	1947	6	3269.80	1948	6	3700.90	1949	6	3819.50
1946	7	1488.70	1947	7	1381.90	1948	7	1253.80	1949	7	1208.50
1946	8	1513.10	1947	8	1667.90	1948	8	1568.30	1949	8	1567.60
1946	9	3550.00	1947	9	3435.10	1948	9	3632.50	1949	9	3893.40
1946	10	1404.00	1947	10	1345.40	1948	10	1179.80	1949	10	1060.30
1946	11	1443.50	1947	11	1665.90	1948	11	1582.70	1949	11	1488.80
1946	12	2885.50	1947	12	2769.00	1948	12	3042.30	1949	12	3214.30
1950	1	2544.90	1951	1	3388.80	1952	1	3770.20	1953	1	3974.70
1950	2	2342.10	1951	2	3325.00	1952	2	4554.30	1953	2	4537.70
1950	3	4428.60	1951	3	7424.70	1952	3	9276.40	1953	3	10228.7
1950	4	1266.80	1951	4	2266.40	1952	4	3917.50	1953	4	2773.90
1950	5	1721.20	1951	5	2520.00	1952	5	3081.10	1953	5	3373.00
1950	6	3526.20	1951	6	6188.00	1952	6	8946.60	1953	6	8704.50
1950	7	1028.40	1951	7	1709.10	1952	7	2260.10	1953	7	2174.90
1950	8	1768.20	1951	8	2534.90	1952	8	3006.30	1953	8	3398.30
1950	9	3634.50	1951	9	5242.20	1952	9	5544.60	1953	9	4866.40
1950	10	1104.80	1951	10	1607.40	1952	10	2023.40	1953	10	1523.60
1950	11	1940.10	1951	11	2430.20	1952	11	2970.60	1953	11	3468.90
1950	12	3163.50	1951	12	4276.50	1952	12	4675.20	1953	12	3931.00

Table 6: NBER Series 15002—Originally taken from the U. S. Treasury Department,
Daily Statement of the U. S. Treasury

**U.S. Federal Government Purchases of Goods and Services,
National Defense, Seasonally Adjusted FIRST, 1946 - SECOND, 1966**

Questions for Inference

1. What happened immediately after WWII?

2. According to this data, when do you believe the Cold War started?

3. According to this data, when do you believe the Cold War peaked?

1946	1	20.4000	1947	1	9.40000	1948	1	9.80000	1949	1	12.8000
1946	2	14.4000	1947	2	8.90000	1948	2	10.4000	1949	2	13.4000
1946	3	11.9000	1947	3	8.70000	1948	3	10.7000	1949	3	13.7000
1946	4	12.3000	1947	4	9.30000	1948	4	12.0000	1949	4	13.1000
1950	1	12.5000	1951	1	24.1000	1952	1	42.5000	1953	1	49.2000
1950	2	12.6000	1951	2	30.4000	1952	2	45.7000	1953	2	49.5000
1950	3	14.2000	1951	3	37.7000	1952	3	47.0000	1953	3	48.4000
1950	4	17.1000	1951	4	42.1000	1952	4	48.5000	1953	4	47.6000
1954	1	44.4000	1955	1	38.7000	1956	1	38.4000	1957	1	43.4000
1954	2	42.0000	1955	2	38.2000	1956	2	40.4000	1957	2	44.1000
1954	3	39.9000	1955	3	39.2000	1956	3	40.4000	1957	3	44.8000
1954	4	38.5000	1955	4	38.1000	1956	4	42.1000	1957	4	44.6000
1958	1	44.7000	1959	1	46.5000	1960	1	45.0000	1961	1	46.9000
1958	2	45.7000	1959	2	46.1000	1960	2	44.4000	1961	2	47.7000
1958	3	46.3000	1959	3	45.7000	1960	3	44.6000	1961	3	47.7000
1958	4	46.9000	1959	4	45.9000	1960	4	45.8000	1961	4	48.9000
1962	1	51.1000	1963	1	51.2000	1964	1	50.1000	1965	1	48.2000
1962	2	53.0000	1963	2	50.5000	1964	2	51.6000	1965	2	49.1000
1962	3	51.3000	1963	3	51.0000	1964	3	49.8000	1965	3	50.7000
1962	4	50.9000	1963	4	50.3000	1964	4	48.5000	1965	4	52.5000

Table 7:   NBER Series 15036—Originally taken from U.S. Department of Commerce, Survey of Current Business, August 1965, July 1966, and 1962-1965.

**U.S. Rates on Customer Loans,
New York City 01/1919-02/1939**

Questions for Inference

1. Based on this data, why do you believe interest rates are lowered?

2. Why are interest rates raised to high levels?

3. What kind of products do you believe they were encouraging people to buy?

4. Why did they have to make their loans have so little interest?

1919	1	5.54000	1920	1	5.93000	1921	1	6.71000	1922	1	5.50000
1919	2	5.36000	1920	2	6.00000	1921	2	6.78000	1922	2	5.48000
1919	3	5.46000	1920	3	6.00000	1921	3	6.70000	1922	3	5.43000
1919	4	5.56000	1920	4	6.09000	1921	4	6.64000	1922	4	5.46000
1919	5	5.43000	1920	5	6.00000	1921	5	6.68000	1922	5	5.06000
1919	6	5.45000	1920	6	6.00000	1921	6	6.43000	1922	6	4.93000
1919	7	5.49000	1920	7	6.43000	1921	7	6.21000	1922	7	5.16000
1919	8	5.49000	1920	8	6.36000	1921	8	6.25000	1922	8	4.66000
1919	9	5.49000	1920	9	6.57000	1921	9	6.11000	1922	9	4.70000
1919	10	5.63000	1920	10	6.57000	1921	10	5.93000	1922	10	4.74000
1919	11	5.56000	1920	11	6.71000	1921	11	5.96000	1922	11	4.82000
1919	12	5.61000	1920	12	6.36000	1921	12	5.68000	1922	12	4.86000
1923	1	4.82000	1924	1	5.21000	1925	1	4.16000	1926	1	4.64000
1923	2	4.91000	1924	2	5.07000	1925	2	4.43000	1926	2	4.68000
1923	3	4.98000	1924	3	5.06000	1925	3	4.53000	1926	3	4.62000
1923	4	5.32000	1924	4	4.98000	1925	4	4.48000	1926	4	4.62000
1923	5	5.27000	1924	5	4.89000	1925	5	4.38000	1926	5	4.66000
1923	6	5.21000	1924	6	4.64000	1925	6	4.36000	1926	6	4.58000
1923	7	5.29000	1924	7	4.21000	1925	7	4.46000	1926	7	4.38000
1923	8	5.18000	1924	8	4.09000	1925	8	4.36000	1926	8	4.62000
1923	9	5.33000	1924	9	4.20000	1925	9	4.57000	1926	9	4.81000
1923	10	5.37000	1924	10	4.41000	1925	10	4.62000	1926	10	4.85000
1923	11	5.39000	1924	11	4.13000	1925	11	4.61000	1926	11	4.79000
1923	12	5.21000	1924	12	4.29000	1925	12	4.70000	1926	12	4.79000
1927	1	4.66000	1928	1	4.56000	1929	1	5.74000	1930	1	5.64000
1927	2	4.56000	1928	2	4.44000	1929	2	5.73000	1930	2	5.35000
1927	3	4.56000	1928	3	4.59000	1929	3	5.81000	1930	3	5.22000
1927	4	4.63000	1928	4	4.72000	1929	4	5.85000	1930	4	4.91000
1927	5	4.63000	1928	5	4.97000	1929	5	5.88000	1930	5	4.74000
1927	6	4.60000	1928	6	5.09000	1929	6	5.93000	1930	6	4.59000
1927	7	4.56000	1928	7	5.38000	1929	7	5.88000	1930	7	4.48000
1927	8	4.41000	1928	8	5.56000	1929	8	6.05000	1930	8	4.41000
1927	9	4.44000	1928	9	5.63000	1929	9	6.06000	1930	9	4.29000
1927	10	4.49000	1928	10	5.63000	1929	10	6.08000	1930	10	4.26000
1927	11	4.35000	1928	11	5.56000	1929	11	5.86000	1930	11	4.17000
1927	12	4.50000	1928	12	5.63000	1929	12	5.74000	1930	12	4.16000
1931	1	4.24000	1932	1	4.71000	1933	1	4.12000	1934	1	3.58000
1931	2	4.31000	1932	2	4.71000	1933	2	4.11000	1934	2	3.43000
1931	3	4.20000	1932	3	4.72000	1933	3	4.88000	1934	3	3.31000
1931	4	4.17000	1932	4	4.69000	1933	4	4.33000	1934	4	3.39000
1931	5	4.11000	1932	5	4.55000	1933	5	4.24000	1934	5	3.42000
1931	6	4.13000	1932	6	4.61000	1933	6	4.10000	1934	6	3.30000
1931	7	4.05000	1932	7	4.42000	1933	7	3.93000	1934	7	3.30000
1931	8	3.97000	1932	8	4.45000	1933	8	3.97000	1934	8	3.33000
1931	9	3.93000	1932	9	4.30000	1933	9	3.79000	1934	9	3.26000
1931	10	4.27000	1932	10	4.35000	1933	10	3.76000	1934	10	3.28000
1931	11	4.67000	1932	11	4.12000	1933	11	3.52000	1934	11	3.22000
1931	12	4.64000	1932	12	4.22000	1933	12	3.48000	1934	12	3.18000
1935	1	2.83000	1936	1	2.64000	1937	1	2.50000	1938	1	2.36000
1935	2	2.90000	1936	2	2.56000	1937	2	2.41000	1938	2	2.34000
1935	3	2.64000	1936	3	2.61000	1937	3	2.50000	1938	3	2.40000
1935	4	2.61000	1936	4	2.54000	1937	4	2.53000	1938	4	2.36000
1935	5	2.69000	1936	5	2.51000	1937	5	2.44000	1938	5	2.40000
1935	6	2.66000	1936	6	2.44000	1937	6	2.34000	1938	6	2.36000
1935	7	2.61000	1936	7	2.44000	1937	7	2.36000	1938	7	2.27000
1935	8	2.67000	1936	8	2.42000	1937	8	2.41000	1938	8	2.16000
1935	9	2.72000	1936	9	2.40000	1937	9	2.39000	1938	9	2.25000
1935	10	2.72000	1936	10	2.46000	1937	10	2.38000	1938	10	2.29000
1935	11	2.77000	1936	11	2.43000	1937	11	2.45000	1938	11	2.33000
1935	12	2.61000	1936	12	2.43000	1937	12	2.40000	1938	12	2.33000

Table 8: NBER Series 13004—Originally taken from Federal Reserve Board, Annual Report for 1931, p. 82 and successive reports; Federal Reserve Bulletin, October 1939, p. 908.

SHORT INFERENCE EXCERCISES (SIE)

(SIE1) Military Participation Ratio, Statistical Summary of American Wars (LSU 2004)

1. Which of these wars required the most participation of the total population?

2. Which of these wars probably affected the American population the most?

3. Which statistic made it easiest to make these conclusions?

Conflict	Population (millions)	Enrolled (thousands)	Ratio
Revolutionary War	3.5	200.0	5.7%
War of 1812	7.6	286.0	3.8%
Mexican War	21.1	78.7	0.4%
Civil War:			
Union	26.2	2,803.3	10.7%
Confederate	8.1	1,064.2	13.1%
Combined	34.3	3,867.5	11.1%
Spanish-American War	74.6	306.8	0.4%
World War I	102.8	4,743.8	4.6%
World War II	133.5	16,353.7	12.2%
Korean War	151.7	5,764.1	3.8%
Vietnam War	204.9	8,744.0	4.3%
Gulf War	260.0	2,750.0	1.1%

Table 9:   Statistical Summary: America's Major Wars, LSU 2004

Yearly Tables

(SIE2) U.S. Net Income of Farm Operators from Farming 1910-1941

1. What could account for such an increase in farmer's income from 1915-1919?

2. Why was there such a dramatic drop in the net income of farm operators from 1920-1921?

3. Based on this data, which year was the peak of the Great Depression?

U.S. Net Income of Farm Operators from Farming 1910-1941

1910	3904.00	1920	7126.00	1930	4340.00	1940	4675.00
1911	3368.00	1921	2990.00	1931	2894.00	1941	6748.00
1912	3767.00	1922	4075.00	1932	1872.00		
1913	3812.00	1923	4767.00	1933	2614.00	National Bureau of	
1914	3944.00	1924	4716.00	1934	3083.00	Economic Research	
1915	3818.00	1925	6010.00	1935	4507.00		
1916	4421.00	1926	5724.00	1936	4710.00		
1917	7532.00	1927	5447.00	1937	5333.00		
1918	8713.00	1928	5831.00	1938	4287.00		
1919	8799.00	1929	5878.00	1939	4478.00		

Table 10:   NBEC Series 08158—Originally taken from U. S. Department of Agriculture, Bureau of Agricultural Economics, Agricultural Statistics, 1942, p.662.

(SIE3) U.S. Laborers' Average Hourly Rate of Wages, Weighted 1863-1891

1. What happened to wages between 1873 and 1880?   What might have had that effect?

2. What was life like on these wages?   How did laborers react to these wages and their lifestyle?

3. How did laborers react to these wages and their lifestyle?

U.S. Laborers' Average Hourly Rate of Wages, Weighted 1863-1891

1863	0.118300	1870	0.158200	1880	0.122000	1890	0.137000
1864	0.138100	1871	0.159600	1881	0.124000	1891	0.137900
1865	0.158300	1872	0.159200	1882	0.128000		
1866	0.154600	1873	0.160600	1883	0.132600	National Bureau of	
1867	0.152400	1874	0.159400	1884	0.131400	Economic Research	
1868	0.155900	1875	0.150600	1885	0.129800		
1869	0.161800	1876	0.141600	1886	0.130500		
		1877	0.132600	1887	0.133000		
		1878	0.126000	1888	0.138200		
		1879	0.123900	1889	0.138300		

Table 11: NBER Series 08139—Originally taken from figures published in U. S. Senate Report No. 1394, The Aldrich Report, "Wholesale Prices, Wages, and Transportation," Finance Committee, Second Session of the 52nd Congress, 1893

(SIE4) U.S. Earnings Yield of All Common Stocks on the New York Stock Exchange 1871-1938

1. Based on this data, what was the overall economic effect of the period of demobilization after WWII?   Why does this occur?

2. What single year had the highest earnings yield?   Why might this be?

3. Based on this data, what was the worst year of the Great Depression?

4. Why is the decade of the 1920s referred to as the Roaring 20s?

U.S. Earnings Yield of All Common Stocks on the New York Stock Exchange 1871-1938

1871	8.61000	1890	5.42000	1910	7.78000	1930	4.74000
1872	8.62000	1891	6.68000	1911	6.40000	1931	2.97000
1873	9.52000	1892	6.59000	1912	7.37000	1932	0.720000
1874	10.0200	1893	5.53000	1913	7.44000	1933	3.38000
1875	8.15000	1894	3.70000	1914	6.41000	1934	3.89000
1876	6.91000	1895	5.41000	1915	10.5700	1935	5.20000
1877	9.55000	1896	4.98000	1916	16.1700	1936	5.86000
1878	9.22000	1897	6.88000	1917	15.1100	1937	6.19000
1879	9.13000	1898	6.90000	1918	13.1500	1938	3.86000
1880	9.42000	1899	7.66000	1919	10.6300		
1881	7.11000	1900	7.74000	1920	10.0800	National Bureau of	
1882	7.25000	1901	6.35000	1921	4.22000	Economic Research	
1883	7.04000	1902	7.48000	1922	8.25000		
1884	6.48000	1903	7.42000	1923	11.3800		
1885	5.87000	1904	6.91000	1924	10.2700		
1886	6.14000	1905	7.47000	1925	11.1900		
1887	6.54000	1906	7.91000	1926	10.0500		
1888	5.01000	1907	8.46000	1927	7.57000		
1889	5.58000	1908	7.43000	1928	7.30000		
		1909	7.87000	1929	6.23000		

Table 12: NBER Series 13049—Taken from Cowles Commission for Research in Economics, Monograph No. 3, Common Stock Indexes, 1939, Table R-1, p. 404-405.

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