Lecture Notes: Touring the Continents: Western Europe, Latin America, & North America

J. Bradford DeLong
Department of Economics & Blum Center for Developing Economies at U.C. Berkeley, & WCEG

http://bradford-delong.com :: brad.delong@gmail.com :: @delong

2019-12-25
Revised 2020-03-31

Slides: <https://github.com/braddelong/public-files/blob/master/econ-135-lecture-18.pptx>
Text: <https://github.com/braddelong/public-files/blob/master/lecture-europe-%26-americas-text.pdf>
To edit this: <https://www.icloud.com/pages/0N0X6WVlAv_MOZQuEAPJDs_gw> <https://www.icloud.com/keynote/0F9iiyQX0pkEnYMjqj3rIXhsQ>
html:

5108 words

I. Touring the Continents

A. Three—or Four—Discrete Regions

The Thirty Glorious Years that had followed World War II were so good for the global economy that they made it impossible for any reversion to anything more like normal post-1870 growth to seem satisfactory.

Now it is time to start our tour of the continents.

Let's start with the North Atlantic plus the western shore of the South Atlantic—with Western Europe, South America, and North America. They make up three discrete regions. Or, perhaps, four discrete regions, if you want to break off the southern cone of South America from the rest of Latin America.

B. Relative Success and Relative Disappointment

Two of these regions do very well indeed, All of western Europe converges to the world's productivity frontier. North America surpasses what had been thought to be the world's technological and industrial pace cars, Britain and Germany, to become "the furnace where the future is forged" from around 1870 to 2016.

Latin America by contrast, does not do well. It has favorable resource to population ratios. yet it fails to converge to the world's productivity frontier.

Why doesn't it? Well, we say "extractive institutions". But that is just a label. How were they created? How maintained? Why the very long shadow of history? Plus there is the puzzle of the southern cone of South America. It too has failed to converge to the global North norm. Yet many explanations that work for "tropical" economies' relative poverty today do not work for the southern cone—do not explain its failure to catch up and converge.

II. Europe

A. 1800-1914

From 1800 to 1914, within western and central Europe, our spread of per capita income levels is constant. We have a spread of 2.5-1 in 1800. We have a spread of incomes of 2.5-1 in 1914. There are no signs of catchup and convergence within western and central Europe. But also there are no signs of divergence. That nonexistence of divergence makes western

Europe an extraordinary region in the context of the years 1800-1914. Most everywhere—in other regions and over the globe as a whole—there is substantial divergence.

Western Europe is the exception. It is as if divergences in political institutions maintained themselves, and so impelled constant relative income levels.

Look at the four countries plotted here: teh United Kingdom, Spain, Sweden, and Hungary. The U.K., Spain, and Hungary grow in parallel. Sweden transitions—from closer to Spain in 1800 to closer to Britain in 1914. Sweden manages to transition itself from being a relatively poor Western European country to being a relatively rich one. As it transitions, it becomes much more democratic and open.

It does converge to the world industrial leader norm. Cause or effect of democraticzation, mass education, and more secure property rights? Almost surely both. How much cause and how much effect? That is a deep question that I do not think we have a terribly good answer to. But we can at least look at the tea leaves.

B. 1914-2020

Western Europe from 1914 to 2020 sees a different pattern: catchup and convergence. The income spread drops from 2.5-1 to 1.5-1. Those countries that do badly during part of the period—Hungary behind the Iron Curtain from 1945-1990, Spain under fascist rule 1936-1975—catchup substantially once their peculiar institutions are dissolved and they reapproch the western european norm.

What is that western European norm? Since the founding of NATO and the implementation of U.S post-WWii aid in the form of the Marshall Plan with its associated conditionality demands that countries establish market-friendly mixed economies, the norm has been social democracy: political democracy, a mixed economy, indicative planning, mass education, and other forms of social insurance. There has been very strong convergence in institutions. And there has been very strong economic convergence as well.

We describe this as converge to “developmental institutions”. But that's just a label describing the existence of a thing. It is not a description of the thing—not a description that is of much use in assisting other countries to insert the key in the lock and so open the door.

Moreover, the penalties of having had “extractive” institutions in the past still seem to matter. Hungary is now a dictatorship. It will be interesting to see what happens next. It will be sad as well. Hungary is now a dictatorship because it was unfortunate enough to have 45 years of extractive institutions from 1945 to 1990 under communism. Even a generation later, the impact is still there.

C. Régime Type & Economic Development

We have seen this earlier. We have seen the importance of regime type in Europe, even in the agrarian and in feudal eras. Recall that we read an article by me and my freshman roommate Andrei Shleifer in which we concluded that institutions mattered bigtime, at least in Europe:

> The total population living in western European cities of 30,000 or more in 1650 was 4.7 million. Had each of the nine regions experienced an additional century and a half of absolutist rule before 1650, this urban population would have been reduced by two million…
>
> Conversely, had all of western Europe been free of absolutist rule over 1050–1650, then the regression in line 1 of table 3 predicts that Europe in 1650 would have had a total urban population of nearly 8 million…

How did Western Europe established democracy and avoid both central planning and aristocratic rent thinking? That is a long historical story which we will now tell a little bit of.

D. Virtuous Circles

The most striking thing about Western Europe is how its institutions revolve in virtuous circles. Up until after World War I, they go always forward, never backward.

It appears to be what was needed for prosperity was secure property rights and a level playing field, with political power constrained and distributed. Then tthere would be far fewer rents from holding power. Then there would be fewer power struggles and greater stability. Then there would be more energy devoted to entrepreneurship and enterprise. Then there would be a lot less energy on the parts of entrepreneurs and enterprisers devoted to trying to protect their political flanks from rent seeking and expropriation

As history advances in time, and western Europe develops, we see the political base of the population getting wider and wider. The population becomes more educated. As more people acquire the potential for political agency, we see franchise extension: more people both allowed to vote and who grab the vote by threatening upheaval if they do not take it.

Elites agree. Sometimes elites agree to draw the fangs of revolution. Sometimes to boost their share of the vote for a freagment of the elite that thought it would benefit from having a larger electorate.

Sometimes elites acquiesced because it was the right thing to do.

D. Socialist Statism

Sometimes elites acquiesced in order to create a strong and prosperous nation. Look at Bismarckian socialism in Germany in the late 1800s.

Look at Otto von Bismarck, first chancellor of the German empire established in 1871. The German empire established by war. Otto von Bismarck, militarist and authoritarian, best known for his speech in 1848 that democrats and parliamentarians were silly: “for it is not by speeches and majority votes that the great issues of the day will be decided, but by blood and iron”.

Yet here is Otto on Bismarck as chancellor in 1884, giving a speech before the German empires parliament, the Reichstag, on the law for worker's compensation that he is trying to push through parliament:

> Does the state have the responsibility to care for its helpless fellow citizens, or does it not? I maintain that it does have this duty…. Those goals that the community can fulfill with justice and profit should be relinquished to the community… the help of persons in distress and the prevention of such justified complaints as in fact provide excellent material for exploitation by the Social Democrats.
>
> That is the responsibility of the state from which the state will not be able to withdraw in the long run.
>
> If one argues against my position that this is ‘socialism', then I do not fear that at all.
>
> The question is, where do the justifiable limits of state socialism lie?… Each law for poor relief is socialism….
>
> “I remind you of France… the remarkable social politician, Léon Say… expresses the French view that every French citizen has the right to starve, and that the state has no responsibility to hinder him in the exercise of his right…

E. Reform Instead of Repression

But why did western European elites, during the long march from 1620 to today of poiltical democratization, engage in franchise extension and in negotiation rather than in repression?

Well, sometimes the answer was repression—especially when the rich good could find a charismatic rabble rouser who they thought could serve as their frontman, most prominently in Germany in 1933 with the rise of Adolf Hitler and the Nazis, and in Italy in 1921 with the rise of Mussolini and the Italian fascists. And there are reactions earlier as well.

Melissa Dell cites Daron Acemoglu and James Robinson's thoughts about what happens in the event of a political shock that momentarily raises the power of the poor. In response, the rich can:

1. promise a less unequal distribution in the future
2. share power via franchise extension
3. repress

If they repress, they had better hope that repression is successful, that it does not lead to revolution. For then they lose everything.

(1) is simply not credible.

So sometimes—and often enough for it to matter for the great sweep of history—they chose (2). When repression seems too risky, then to sharing power via franchise extension is a way to try to calm down the system and prevent there from being chaos. Witness Britain's First Lord of the Treasury Earl Grey on the Great Reform Bill of 1831:

> There is no-one more decided against annual parliament[ary elections], universal suffrage and the [secret] ballot than I am. My object is not to favor, but to put an end to such hopes and projects ... The principal of

> my reform is to prevent the necessity of revolution ... reforming to preserve and not to overthrow…

F. Fear of Revolution

Western European elites did fear revolution and change. They were subject, relatively and also absolutely, to being creatively destroyed. But their response was more often than not to eschew repressing their opponents. Rather, it was by trying to figure out a way to work change to their advantage—coopting some into the power structure by further liberalizing the system, hoping to produce other bases of power than simply force, law, and history.

They were the rich. They were in an environment in which they were the rich and they were facing demands for income redistribution and more opportunity on the part of the poor.

Perhaps they could assemble a ruling coalition by focusing on some other potential societal cleavages and bases of The nation against the nation's enemies? The religious against the ot so religious? Order and things-as-they-were against anarchy and change? Issues on which they would have a majority of the electorate on their side?

And of course in some places there was revolution—and then change became more radical. And that made elites fearful of trying to put your finger in the dike to hold back the flood. If the flood was not channeled, it would overwhelm—as the French aristocracy had been overwhelmed in the Great French Revolution.

That was when France became the first country to adopt universal male suffrage in 1792. It served as an example of what others might fear, and why they should be gladly offering more minor franchise extensions.

(Curiously, France was also one of the very last year Western European countries to grant women the right to vote, waiting until 1944 and its liberation from the Nazis to do so.)

G. The Imprint of Napoleonic Conquests

Can we tell much about whether franchise extension and political liberalization—establishment of a level playing field, secure property rights, and rules of the game that made all equal (as opposed to making some aristocrats more equal than others)—whether that was the cause of rapid economic growth or the consequence? Acemoglu, Cantoni, Johnson, & Robinson use the variation within present day Germany as a result of French rule in the Napoleonic era to try to find out. They think the legacy of the spread of the French Revolution and its institutions via Napoleon's conquests from 1800-1815 gives them a clue.

In the map over on the right, the dark green shows the areas that were annexed to the French empire under Napoleon between 1804 and 1815. These were the areas that introduced modern French institutions. Guilds were more likely to be disestablished. Equality under the law was imposed. A written civil legal code was adopted. And in those dark green parts of Germany, we see faster economic growth thereafter. (This is also the case for Tuscany and Latium vis-a-vis elsewhere in Italy. This is also the case in Dalmatia over on the other side of the Adriatic).

We do see faster economic growth in the Rhineland and in North Germany around Hamburg. near the North sea. ACJR argue that the imposition of French institutions in some places but not others was exogenous to what the potential for economic growth was. France decided where to conquer via a military logic. Thus they interpret all of this correlation as a causal chain running from institutions to growth.

That institutional reform was the cause and growth was largely the effect I agree. But all? Yes, there is a discontinuity where the French conquered. But I do not believe that military concerns were unconnected to growth potential. Thus I don't think the evidence they presented is as strong as they think it is. France conquered regions close to France, with good transporation networks. Those are related to growth potential, as well as satisfying the military logic.

H. East of the Elbe River

By contrast, in eastern Europe and sometimes in central and Southern Europe as well, we see elites that are much less eager to compromise and much more eager to repress.d My teachers' teacher Alexander Gerschenkron on Russia, in his Europe in the Russian Mirror: Four Lectures in Economic History:

> Economic progress began to be viewed with great suspicion and the railroads came to be regarded, not as welcome carriers of goods and persons, but as carriers of the dreaded revolution. Then the State clearly became an obstacle to the economic development of the country…

Jerome Blum points to early 19th century Austria, before 1848:

> These living forces of the traditional economic system were the greatest barrier to development. Their chief supporter was ... Emperor Francis. He knew that the advances in the techniques of production threatened the life of the old order of which he was so determined a protector. Because of his unique position as final arbiter of all proposals for change he could stem the flood for a time. Thus when plans for the construction of a steam railroad were put before him, he refused to give consent to their execution 'lest revolution might come into the country'…

Eastern European elite saw what was happening in the West. They recognized that structural change could cause them to lose their power.

They did not want to be creatively destroyed by change. And so they tried to freeze things.

This is opposed to the view that “if things are to stay the same, then everything must change”, that we see laid out in the 19th century novel I Gattopardo, which described the reaction of elites in the bulk of Western Europe. Western European elites tried to ride the wave—spent time trying to figure out how to deal with the changes that technology and democracy were bringing to the world. Eastern European elites did not: poverty, income gaps, fascism, revolution, and communism were the result.

II. Latin America

A. Not a Monolith

And then there is the great divergence in Latin America. The failure to converge in Latin America, independent from the 1820s, not ruled by colonialists, at least formally democratic, is distressing and puzling to economists.

The formal institutions of the state are republican from the 1820s on. Yet Latin America fell and remains far behind the global North norm in terms of prosperity today.

Popular wisdom emphasizes high rates of inequality and poverty in Latin America. The stakes of politics are higher and the tools used sharper because the elites are richer and feel that they have more to lose by creative destruction from economic change. And because the poor are poor, they are unable to find the resources to educate themselves and become more productive. Yet the situation is complicated. Things matter at a detailed level. Latin America is not a monolith: For example, between-municipality differences are twice as large as between-country differences. It's not so much that Latin American countries are poorer than others. It’s that some regions are much poorer than others. And few regions are very rich. So national -evel institutions cannot play a huge and exclusive role.

Yet, of course, comparing Latin America as a whole to the global North, the gap remains huge even between even the richer portions of Latin America and the global north in large part of nation-level institutional differences.

What are the causes of these differences in prosperity, both comparing Latin America as a whole to the north Atlantic and within Latin America? Historical institutions? Historical inequality. Some people stress geographic and ecological factors.

General education levels explain about half of Latin American divergence both within Latin America and compared to the rest of the world. But what accounts for the rest? Where does it come from? Does it come from institutions? Does it come from the failure to provide other public goods besides education? Does it come from geography?

Let's see what we can try to establish.

B. The "Mita" and the Climate

Let's start with some maps. Here we see one institutions map and two geography maps.

Here on the left we see Peru, and the boundaries of the "mita", an institution introduced under Spanish rule to extract a forced labor force to staff the silver mines at Potosi, which was one of the major sources of Spain's wealth from the exploitation of the the American colonies back when Spain ruled the area region. The silver would not extract itself. And so societies were thrown into turmoil and upheaval as large amounts of men were pulled away from their homes and instead sent into near-slave labor in the mines. That turmoil had impacts on local public economy. “Miita” regions even today appear to be much poorer than those surrounding.

Then we have Brazil, with the hot and wet Northeast settled early by Portuguese poor and devlted to primary product production: sugar cane, coffee, and so forth. Brazil’s south is much more like the southern cone of Latin America. It was settled later. it is more temperate. It is much richer, much more industrialized, much more prosperous, and also cooler. In Mexico as well we see a substantial temperature-humidity-prosperity gradient. It is the Yucatan and the south that are the places in Mexico that are the poorest and the wettest and the hottest, compared at least to the central Valley and central plateau of Mexico.

As Melissa Dell points out, the historical marks left on Peruvian prosperity today by the silver mines at Potosi and the “mita” forced labor system are quite remarkable and quite apparent. If you were subject to the “mita”, your communities are 25% Porter today. You have fewer roads and lower education levels. You receive fewer public goods. The interruption of livelihoods for the labor draft meant that “mita” re residents became and remain subsistence farmers rather than getting educated and moveing into crafts. And you had few large landowners in “mita” districts—if you were constantly being drafted off and sent to the mines, it was a very difficult to accumulate property. But the lack of accumulated property in the hands of the rich did not mean lots of stable small farms. It did not mean secure property rights. It rather meant, rather, no property rights at all: There was no one with enough wealth and enough of a backing and enough of a clientele to make their claims to property stick against the central government.

The remarkable and screwy thing is that these effects persist, that what happened centuries ago seems to influence how political economy works today. How much the Peruvian government with the workings of its bureaucracy is willing to support and encourage growth in different regions is, at a very granular level, highly correlated with the social historical imprint of the "mita".

As Edgar Gonzalez put it:

> It's certainly not geography, it's government… some provinces have been favored, with the government—particularly during the large road building campaign in the early 1950's—choosing to construct roads in some provinces and completely ignore others…

This regression discontinuit at the borders of the "mita" is visible and impressive. It is a sign of how much history is, in fact, a series of butterfly wingflap accidents, with small changes in the distant past sometimes having very large changes in the way things work on the ground today.

C. Reversal of Fortune

We thus see that have a rather stunning reversal of fortune in the Americans over the past three centuries.

As British commentator, journalist, intellectual and farm expert Arthur Young put it in his Political Essays Concerning the Present State of the British Empire:

> It appears on the whole, that the staple productions of our colonies decrease in value in proportion to their distance from the sun. In the West Indies, which are the hottest of all, they make to the amount of 81£.12s.1d per head... In the northern settlements, to that of 2s. 6d. This scale surely suggests a most important lesson—to avoid colonizing in northern lands…

But those Northern lands—New England and the province of Ontario in Canada—are now the richest in the world, Arthur Young was very, very wrong. Things changed after 1800. The United States and also Canada industrialized and grew rapidly. By 1910 they were the richest regions in the world. They sustained that achievement throughout the 20th century.

By contrast, after independence many Latin American countries underwent sustained economic decline: Mexico. Others suffered stagnation: Brazil and Colombia. Life expectancy in Latin America went from being equal to that in North America in 1700 to around 60% of the level of the United States in 1900

There were transitory catchups: Brazil in the 1960s ,Venezuela between the 1930s and 1960s, Chile since 1985.

There also have been examples of sustained divergence. Argentina was prosperous in 1920. Back then it looked a lot like New Zealand or Australia or even Canada. But since the 1920s, Argentina has been on a downward sustained downward relative spiral.

Venezuela, recently, has been worse. It has been on a remarkably rapid downward relative spiral with respect to the global north since 1980

D. Functional & Dysfunctional Oligarchies

The importance of chance, of luck, of a particular setup that gives you bad institutions by giving you too-unequal a distribution of income and too-dominant an oligarchy at the start. The long and very dark shadow cast by such things down the centuries in terms of "extractive" rather than "developmental" institutions.

How are we to understand this?

I think this is best understood by going to German sociologist, Robert Michels and his Iron Law of Oligarchy: the general rule that 80% of the stuff is grabbed by 20% of the people. Yes, umans are friendly gift exchange animals. Yes, humans are empathic animals. But humans are also animals that to some degree like there to be a dominance hierarchy.

As Michels put it, the elite can change—a partial or total circulation or replacement—but a power elite of some sort will remain. A good society will have a stable elite interested in win-win cooperation. A bad society will have an unstable elite fearful of its place focusing on win-lose exploitation.

As Michel put it:

> Society cannot exist without a “dominant” or “political” class, and that ruling class, while its elements are subject to frequent partial renewal, nevertheless constitutes the only factor of sufficiently durable efficacy in the history of human development.
> ‘
> The government, or… the state, cannot be anything other than the organization of a minority. It is the aim of this minority to impose upon the rest of society a “legal order” which is the outcome of the exigencies of dominion and of the exploitation of the mass…. Even when the discontent of the masses culminates in a successful attempt to deprive the bourgeoisie of power, this is... effected only in appearance; always and necessarily there springs from the masses a new organized minority which raises itself to the rank of a governing class…

We see this, of course, most impressively in Russia and in China, Russia and China go through the most unbelievable and prolonged revolutionary processes throughout the years of the 1900s. Yet Russia started out with a czar: Nicholas II Romanov. Russia ends with a Czar: Vladimir Putin. China started out with a court: the late Qing dominted by Cixi of the Ching dynasty, China ends with a court—this time dominated by Xi Jinping.

The question is, rather, how powerful are the institutions that provide voice and that provide a check on the exploitation of the mass by the elite? A situation in which the elite exploit less is one in which there's an opportunity to train the elite that developmental institutions, while they may make its relative dominance much less strong, do make for a better and a wealthier society. Few in America's power elite would change their positions for those of Russia’s today.

And that matters.

By contrast, in Latin America, even today, too much of the elite fear, the consequences for themselves of failing to maintain a strong repressive hand. That is because they anticipate that they, should revolution come, should repression fail, will not stay on top afterwards. Their segment of the elite will be replaced by another elite. Very little of Cuba's elite in the 1950s was its elite under Fidel Castro in the 1960s and 1970s. It was a different elite—although still an elite.

Hence the fight tooth and nail to prevent sufficient change to threaten revolution. That plus the fact that the life of an exploiter under extractive institutions is a relatively cushy one evenIf you do not have managed formal education or much productive skills—that seems to explain a bunch of Latin America's relative decline at a fairly deep and fundamental historical level.

E. The Long Shadow of History

Thus we have what Engerman and Sokoloff see as very long historical consequences of having been ruled by slave masters. We can see today the imprint on modern societies Latin America's history back centuries and centuries ago.

The different labor systems established in the colonial era as the result of the luck of history and factor endowments leave their legacy. Where it was most profitable to establish unfree labor systems, they were established.

How do you establish an unfree labor system? Through domination. How do you maintain an unfree labor system? Through domination? What does having an unfree labor system due to elite incentives? It creates an elite focused on domination, rather than an elite focused on developing resources in cooperation with others.

Does the elite control the economy by and large? Yes. If so, does it control it in its own long run interests? The answer is that an elite that sees itself as exploitative is going to be much less interested in education, in infrastructure, in anything other than maximizing the amount of surplus extracted in the short run. And that focus is not even in the elite's interests if we look at it as a boy echoing down the generations.

And so we see the great reversal of fortune between Latin America and North America between 1700 and today.

II. North American Ascendancy

A. Chicago

This is a reminder that American economic ascendancy and the ascendancy of the global north more generally is one of the most extraordinary features of all of modern economic history. Such divergence and exceptionalism in a world that is as small in transport and communications and ideas! How can that environment be consistent with such huge divergence in terms of income and wealth?

I also present a poem from Carl Sandburg, Chicago, celebrating the exuberant industrialization and culture of that Midwestern metropolis. Read it. It's fun. Better yet, find a skilled poetry reciter to read it to you. It's better:

Hog Butcher for the World,
Tool Maker, Stacker of Wheat,
Player with Railroads and the Nation's Freight Handler;
Stormy, husky, brawling,
City of the Big Shoulders:
They tell me you are wicked and I believe them, for I have
seen your painted women under the gas lamps luring the
farm boys.
And they tell me you are crooked and I answer: Yes, it is true I
have seen the gunman kill and go free to kill again.
And they tell me you are brutal and my reply is: On the faces
of women and children I have seen the marks of wanton
hunger
And having answered so I turn once more to those who sneer at
this my city, and I give them back the sneer and say to them:
Come and show me another city with lifted head singing so
proud to be alive and coarse and strong and cunning….
Laughing the stormy, husky, brawling laughter of Youth, half-
naked, sweating, proud to be Hog Butcher, Tool Maker,
Stacker of Wheat, Player with Railroads and Freight Handler to
the Nation.

B. 1650-1860

It was the conquest of natural resources resources that had driven North America's economy forward until the 1860 Civil War.

European settlement of the region that was to become the United States started in earnest around 1650 as three groups—religious fanatics, canny traders, and simple conquistadores—converged on the region. The religious fanatics wanted to build theocracies. The canny traders wanted to exchange products abundant in Europe for things valuable in Europe but scarce in America. The conquistadores wanted to loot and steal. Their descendents became the American colonists.

The American colonists soon found themselves rich by pre-industrial standards—perhaps twice as rich as their predecessors and compatriots back in northwestern Europe. There was lots of unoccupied farmland on or near watercourses. Why there was so much unoccupied farmland in 1650 is a horrifying story. America had been isolated from the Eurasian disease pool for the twelve thousand years since the end of the last ice age. And Europeans domesticated lots of animals, and slept near them. The isolation of evolving disease pools meant that after contact in 1492 each side was very vulnerable to the other side's diseases. But the Europeans had domesticated and lived cheek-by-jowl with all kinds of animals for thousands of years, and so lots of diseases had jumped the species barrier, and so the Europeans had many, many more diseases. That, plus conquest, war, plunder, genocide, torture, and enough culture shock to stun a grizzly bear, caused the Amerindian population of the Americas to crash from fifty to a hundred million in 1492 to perhaps five million in both American continents by 1650. The first generations of settlers of North America from England could farm as much land as they wished—and it was very good land to farm too.

The religious fanatic settlers were pleased in the short run but disappointed in the long run—their theocracies crumbled. The conquistadores were disappointed in both the short and the long run: there was little in the way of valuable movable property to grab and steal in what was to become the United States. The canny traders were disappointed in the short run—they went broke—but their successors were pleased in the long run as settlements grew and began to export.

1640 saw perhaps twenty-five European colonists in the region that is now the United States. 1790 saw that population equal four million. Then, just about independence, the U.S. east of the Appalachians begins to run out of good, currently-unoccupied land.

Between 1790 and 1860 the population of the United States grew from 4 million to 31 million—with a split changing from two million in Virginia and further south and two million in Maryland and further north in 1790 to nine million in the South (four million of them slaves who were not attached to the Peculiar Institution of African-American slavery, or rather were too strongly attached to the Peculiar Institution for their liking) and twenty-two million in the North at the start of the Civil War. From 1790 to 1860 average living standards roughly doubled—call it from $1000 year-2008 purchasing-power dollars in 1790 to $2000 year-2008 purchasing-power dollars in 1860, but that is just a guess.

These figures give us a rate of growth of real production per worker of 1.0% per year from 1790 to 1860, accompanied by a rate of population growth of 3.0% per year. This last happens to be the rough demographic limit: very few human populations no matter how well-situated have ever managed to do more than double every twenty-five years, which is what growth at 3.0% per year means.

Suppose the stock of available and accessible resources had not grown at all. Suppose that the U.S. had been penned up behind the Appalachians from independence on—in some counterfactual alternate-history novel in which Britain arms the trans-Appalachian Amerindians with firearms and tactical advisors, and uses threats of blockade to keep the United States from mounting major wars of conquest as opposed to the nibbling expansion that took place. What would have happened then? We can use our rule of thumb again, but this time not with a +1.8% but with a –3.0% per year for the growth rate of resources per capita. We get -0.6%. In that alternate-history-novel world, American living standards would have fallen at 0.6% per year throughout the first two-thirds of the nineteenth century.

That's a lot like the nineteenth-century experience of China (although starting from a higher living-standard base). The pace of technological advance before 1870 was not fast enough to deliver rising living standards to a population expanding at the rough demographic limit that the United States was expanding at—not without tremendous increases in available and accessible natural resources.

This is why the history of the United States in the years up to the Civil War is a history of transportation improvements—riverboats, canals, steamboats, and railroads—of westwards settlement—land clearing and experiments with new crops and new varieties of crops—and of conquest, genocide, and Amerindian removal—the Cherokee Trail of Tears, the Battle of Horseshoe Bend, The Battle of Tippecanoe, &c.

C. 1860-1929

In the United States the *Belle Époque*, the Gilded Age, the period of the explosion of prosperity set in motion around 1870 lasted longer than elsewhere in the world. China collapsed into revolution in 1911. Europe descended into the hell of World War I in 1914. In America the period of progress and industrial development lasted longer—perhaps from when the guns fell silent at the end of America's Civil War at Appomattox in 1865 until the start of the Great Depression in the summer of 1929. And growth was far stronger. In 1870 the focus of economic growth crossed the Atlantic to America, where continent-wide scale, a flood of immigration, vast resources, and an open society that made inventors and entrepreneurs culture heroes welcomed economic growth.

In 1869 the United States had 35 million people in it, at an average measured economic standard of living of some $1,600 year-2008 dollars per year, at least two-thirds farmers or other small-town rural dwellers. By 1929 farming and other small-town rural dwellers were down to one-eighth of the population, America had 122 million people in it, and the average measured economic standard of living was some $6,000 year-2008 dollars per year. These give us growth rates of 1.9% per year for the population of the country and of 2.1% per year for output per capita. (Contrast with growth rates of 2.9% per year for population—from 4 to 35 million—and 1.4% per year—another near-tripling—in measured economic output per capita in the years up to the Civil War.)

The sources of America's twentieth-century exceptionalism were many. The scale of the country induced the rise of modern management. The scale of the country encouraged mass production: industries that could take advantage of the potential demand created in a continent-wide market.

Gavin Wright and others have stressed the crucial role played by natural resources in America's industrial supremacy: in a world in which transport costs are still significant, a comparative advantage in natural resources becomes a comparative advantage in manufacturing. Others stress the links between a resource-rich economy and the "American system" of manufactures, relying on standardization, attempts to make interchangeable parts, heavy use of machinery—and wasteful use of natural resources like materials and energy. In the twentieth century this American system was to lead straight to the possibilities of mass production, not because of any far-sighted process of industrial development but through myopic choices that generate further technological externalities.

All of these flowed together. And the end result was a United States that had a remarkable degree of technological and industrial dominance over the rest of the world for much of the twentieth century.

Come 1870. The frontier is effectively closed. Yet American economic growth continued.

The continuation—nay, the acceleration—of growth in output per worker alongside continued population growth was remarkable given that the frontier had closed in the immediate aftermath of the Civil War. The natural resources the United States had then conquered were pretty much all that there were. The focus of American growth shifted from expansion and resources to industrialization: movement to the factory rather than the westward farm frontier.

Even farming became an industrial occupation: no longer muscle, ox, and horsepower but automatic reapers, harvesters, pumps, stationary gasoline engines, tractors. So we shift to a different rule-of-thumb in our accounting for economic growth: resources are no longer a huge constraint, and the growth rate of output per worker is equal to ½ of the growth rate of the capital stock per worker plus ½ of the growth rate of the efficiency of labor.

D. Growth Accounting

Let's give the difference between the growth rates of the capital stock and the growth rate of output per worker a name: d, for capital deepening—the extent to which the economy becomes "more industrial" in the sense that each unit of output made is backed by and in fact requires an increasing number of units of capital behind it. Then the growth rate of output per worker is simply equal to the sum of the rate of capital deepening and the rate of improvement in the efficiency of labor.

What generates a high rate of capital deepening? Two things: a differential fall in the price of capital goods—an economy that gets differentially better at making machines and structures—and a rise in the savings rate, in the share of production that is on average saved and invested for the future. Between 1870 and 1929 we saw an annual rate of capital deepening in America of 1.2% per year, and an acceleration of productivity growth in the efficiency of labor to a rate of 0.9% per year. Plug these numbers into our industrial growth rule of thumb and we can see the growth-accounting drivers of 1870-1929 America. Output per worker and per capita, which had been growing at 1.0% per year before 1870, doubles to 2.1% per year. Some 4/7 of this economic growth in measured economic output per capita came from capital deepening—more capital, more produced means of production, more machines backing up each worker. Some 3/7 coming from improvements in the efficiency of labor—working smarter made possible by more education, organizational improvements, and other improvements in technology not directly related to those that made capital goods cheaper.

Thus it was not invention all by itself that made American prosperity increase so rapidly from 1870 to 1929. It took enormous habits of thrift and thus of capital accumulation as well. The inventions mattered, but so did the culture of saving for a rainy day.

Perhaps, though, invention was necessary if not sufficient. In the absence of the new, modern, industrial technologies, where could you have invested your savings—in what enterprises and capital goods could they have found a place—that would have generated such a large increase in production? Before the coming of modern economic growth and its intimate dependence on technology embodied in large-scale capital equipment, habits of thrift did not get you very far. But once technology and invention became the key that turned the lock, the benefits of thrift for growth were mighty indeed.

E. Inclusion & Immigration

In America in 1913, even in rural America, children went to school. The years before World War I saw a large increase in education, as at least elementary school became the rule for children in leading-edge economies. And years of education grew as well.

In countries like the United States that made the creation of a literate, numerate citizenry a high priority—and that encouraged those with richer backgrounds, better preparations, and quicker or better trained minds to go on to higher education—industrialists and others soon found the higher quality of their workforce more than making up for the taxes to support mass secondary and higher education. The U.S.'s edge in education was a powerful factor in giving the U.S. an edge in productivity—and Germany's edge in education was a powerful factor in giving Germany an edge in industrial competitiveness also. In the United States in 1910 some 355,000 were attending college, making up nearly five percent of their age cohort. In Germany in 1910 some 1,000,000 students were enrolled in post-elementary education. And the higher wages and salaries paid to trained engineers and craftsmen induced the boom in education.

And America turned a great many immigrants into Americans. And in so doing probably turned the years from 1940-2016 into an era of American predominance.

Consider: In 1860 the United States had a full-citizen population—i.e., Caucasian English speakers whom the government regarded as worth educating—of 25 million, while Britain and its Dominions had a full-citizen population of 32 million. By 1940 things had changed: 117 million full-citizen Americans; 76 million full-citizens in Britain and the Dominions. But if we look at the pro-rata descendants of the full citizens of 1860, we see numbers of roughly 50 and 65 million, advantage Britain and the Dominions.

Up to 1924 New York welcomed all comers from Europe and the Middle East, while London and the Dominions were only welcoming to northern European Protestants. There is a counterfactual in which the British Empire of the late 1800s is more interested in turning Jews, Poles, Italians, Romanians, and even Turks into Britons or Australians or Canadians. That world would have been a much more London-centered world for much, much longer.

F. The Forge of the Future

Because it was in relative terms so prosperous and so technologically advanced, the United States in the twentieth century was the country where people looked to see the shape of the future, just as Holland in the seventeenth and Britain in the nineteenth centuries had been the focuses of institutional and economic innovation and the balance wheels of world economics and politics. For much of the twentieth century, the United States seemed to observers from Europe and elsewhere to be a qualitatively different civilization: it lacked the burden of the past that constrained the politics and oppressed the peoples of the nations of Europe, and freed from the burden of the past it could look toward the future.

We can see some of the admiration and wonder that turn of the century America triggered by gazing at the early twentieth century United States through the eyes of a 1916 transitory immigrant who, later, recorded his experiences in his autobiography. Not only Lev but his father David (1847–1922) and mother Anna (1850-1910) had been migrants. David and Anna crossed the greatest river they had ever seen to move hundreds of miles out of the forest and into the grasslands—lands where the horse nomads had roamed within recent historical memory before their suppression by the army. The lands thus seized were among the richest agriculture soils in the world, and very thinly settled: it was fifteen miles from their farm in Yanovka to the nearest post office. So they sent their son Lev to school in the nearest port city, Odessa.

There Lev Davidovich Bronstein became a communist. And midway through his career he found himself feared by Czars and policemen, and hunted and exiled because he was feared. Unlike the bulk of the people who had left the Old World for the New in the previous half century, Lev Bronstein did not want to be there. He was a political exile: one of those feared by Czars and policemen, and hunted and exiled because they were feared. But once he and his family had landed in New York, he and his family made the best of it. The Bronsteins:

> rented an apartment in a workers' district, and furnished it on the installment plan. That apartment, at eighteen dollars a month, was equipped with all sorts of conveniences that we Europeans were quite unused to: electric lights, gas cooking-range, bath, telephone, automatic service-elevator, and even a chute for the garbage.These things completely won the boys over to New York. For a time the telephone was their main interest; we had not had this mysterious instrument either in Vienna or Paris...

They—particularly the children—were overwhelmed by the prosperity of the United States, and by the technological marvels that they saw in use everyday:

> The children had new friends. The closest was the chauffeur of Dr. M. The doctor's wife took my wife and the boys out driving... the chauffeur was a magician, a titan, a superman! With a wave of his hand, he made the machine obey his slightest command. To sit beside him was the supreme delight.

He stayed in the United States for less than a year. The Russian Revolution came, and he returned to the city of St. Petersburg (whose name was changed, first to Petrograd, then to Leningrad, and now back to St. Petersburg). As Leon Trotsky (an alias taken from one of his former Czarist jailers in Odessa in order to evade the police) he became Lenin's right-hand, the organizer of Bolshevik victory in the Civil War, the first of the losers to Stalin in the subsequent power struggle, and finally the victim of the Soviet secret police, assassinated with an ice-pick in his head outside Mexico City in 1940.

Trotsky was never allowed back into the United States: he was, after all, a dangerous subversive, with a long-run plan that included the overthrow of the government of the United States by force and violence. Thus he had no time to more than "catch the general life-rhythm of the monster known as New York." But on his departure Trotsky felt—or at least he later wrote in exile that he had felt—as if he was leaving the future for the past:

> I was leaving for Europe, with the feeling of a man who has had only a peek into the furnace where the future is being forged...

Notes, etc.

Slides: <https://github.com/braddelong/public-files/blob/master/econ-135-lecture-18.pptx>

Text: <https://github.com/braddelong/public-files/blob/master/lecture-europe-%26-americas-text.pdf>

To edit this: <https://www.icloud.com/pages/0N0X6WVlAv_MOZQuEAPJDs_gw> <https://www.icloud.com/keynote/0F9iiyQX0pkEnYMjqj3rIXhsQ>

html