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ECONOMICS 303Y1

The Economic History of Modern Europe to 1914

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Lecture Topic No. 21:

- V. THE RAPID INDUSTRIALIZATION OF GERMANY, 1815 - 1914**
- A. Barriers to German Economic Development: for independent reading**
- B. Market Unification: the German Zollverein and the Reich**
- C. German Transportation: Railways and Steam Shipping**

V. THE RAPID INDUSTRIALIZATION OF GERMANY, 1815 - 1914

A. BARRIERS TO GERMAN ECONOMIC DEVELOPMENT:

- For independent reading only.
- We begin instead with the first and most important measure in overcoming these barriers: market unification and the transportation revolution, in railways and shipping.
- This is the same format that I have followed in analysing the economic development and industrialization of continental countries in the 19th century, beginning with France.
- **Again: the key organizing principle for these lectures is the role of the state:** to understand and to measure the impact of state economic policies on German economic growth: in terms of the market, agriculture, banking & finance, industry, etc.

B. MARKET UNIFICATION: THE GERMAN ZOLLVEREIN AND THE REICH

1. The German States before and after the Napoleonic Wars:

a) **Germany, before the French Revolution, was even more divided than France had ever been, because of its medieval and early-modern feudal heritage:** the heritage of feudal fragmentation – which thus meant fragmentations of continental markets (as seen in France)

i) **Most of Germany lay in the so-called Holy Roman Empire or Habsburg Empire:** ¹

(1) Up to the 18th century, most of what we now call Germany and Austria

- was known as the Holy Roman Empire, or the Habsburg Empire (from 1282).
- it was under the nominal suzerainty of the Habsburg Emperor, who was resident in Vienna

(2) It was not a country but rather a feudal mosaic or a loose collection of :

- some major kingdoms: such as Austria, Saxony, Bavaria,
- along with hundreds of other principalities large and small,
- and some city states: city republics that were the remnants of the old Hanseatic League: Hamburg, Bremen, and Lübeck.

¹From Answers.com: ‘Habsburgs: Royal German family, one of the chief dynasties of Europe from the 15th to the 20th century. As dukes, archdukes, and emperors, the Habsburgs ruled Austria from 1282 until 1918. They also controlled Hungary and Bohemia (1526 – 1918) and ruled Spain and the Spanish empire for almost two centuries (1504–06, 1516– 1700). One of the earliest Habsburgs to rise to great power was Rudolf I, who became the German king in 1273. Frederick IV, the Habsburg king of Germany, was crowned Holy Roman emperor as Frederick III in 1452, and Habsburgs continued to hold that title until 1806. Frederick’s son Maximilian I acquired the Netherlands, Luxembourg, and Burgundy through marriage. The zenith of Habsburg power came in the 16th century under the emperor Charles V. See also Holy Roman Empire.’

(3) The Kingdom of Prussia: within Germany

- was now one of the most powerful of the German states
- formerly the Duchy of Prussia, to 1701, when it became the Kingdom of Prussia.
- but its original heartland, with Königsberg [now Kaliningrad] as its major city, lay outside the Holy Roman Empire -- in what was later called East Prussia [Ost Preussen];²
- Prussia had also, however, acquired equally large and powerful territories to the West:
- such as Pomerania and Brandenburg (with its capital, Berlin), which did indeed lie within the Holy Roman Empire.

(4) Note: Prussia no longer exists as such, though of course Brandenburg does as one of the major German *Landen* or states.

ii) **Napoleon's French armies shattered that Holy Roman Empire forever** (in 1806):³

(1) With Napoleon's defeat the victors at the Congress of Vienna in 1815 completely redrew the map of Germany and Central Europe,

(2) The victorious allies, under British leadership, made the following changes for the German-speaking lands.

iii) **The German Confederation: consisting of just 39 states:**

(1) Officially known as the *Deutscher Bund*, under the presidency or leadership of the kingdom of Austria:

- the former heartland of the old Holy Roman Empire, or Habsburg Empire (capital: Vienna)
- which still continued to exist as the much smaller Habsburg Empire, outside the Confederation;
- and indeed Austria lasted up until the end of World War I -- having combined with Hungary in 1867: as the Austro-Hungarian Empire.

(2) This new German Confederation ranged in size from:

- the kingdoms of Austria and Prussia (technically excluding East Prussia) -- which together accounted for well over half of the population and land mass –
- to the old Hanseatic city states of Hamburg, Bremen, and Lübeck: on the Baltic and North Sea.

² After the Soviet Red Army had expelled the German Wehrmacht from this region of the eastern Baltic in 1944, the Soviet government, needing a warm water naval base in the Baltic, incorporated the former Königsberg into the Soviet Union, and renamed it Kaliningrad, after Mikhail Kalinin (1875-1946), who was the titular head of state under Josef Stalin, serving as President of the Soviet Central Executive Committee (1919-38) and of the presidium of the Supreme Soviet (1938-46), to his death, from natural causes. To this day it remains part of the Republic of Russia, though separated from it by Lithuania.

³ But, if somewhat confusingly, not the Habsburg Empire, which continued until the end of World War I, in 1918 – i.e., with the defeat of Austria-Hungary, the essence of the Habsburg Empire.

(3) The Republic of Switzerland, 70% German speaking (the rest being French, Italian and Romansch) was, of course, excluded from both the German Confederation and the Habsburg Empire.

b) Each of these post-1815 German states, virtually independent, retained its own customs duties, tariffs, excise taxes, currency, and economic policies:

i) The only states capable of exercising any leadership were the two kingdoms just mentioned:

(1) Prussia:

- which had been chiefly responsible for the final defeat of Napoleon in 1815; and
- which became the chief rival of Austria for hegemony on the German-speaking world, after the Napoleonic wars.

(2) Austria:

- with its own Habsburg Empire partly outside the Confederation
- but, following its defeat in the Austro-Prussian War, in 1866, Austria was excluded from the new North German Confederation.

ii) Prussia's dominance:

(1) Because of Prussia's crucial role in ending the Napoleonic Wars, thereby rescuing the British at Waterloo (1815), Prussia received its reward at the ensuing Congress of Vienna:

- to redraw the map of Napoleonic Europe and
- by adding considerable territory in the West, especially in the Rhineland.

(2) Those western acquisitions allowed Prussia to dominate:

- all the key east-west and north-south trade routes, and
- thus effectively to dominate most of which became modern Germany, i.e., the German Reich after 1871.

2. The Beginnings of Economic Unification: Prussia's Maassen Tariff, 1818

a) Maassen (sometimes spelled: Maasen) and Fiscal Reform:

i) Karl Georg von Maassen (1818-34): was Prussia's post-war director-general of taxation (1818-30) and then finance minister (1830-34) .

(1) following Prussia's victory over Napoleon and the territorial realignments of the Congress of Vienna, he was first of all determined to rationalize Prussia's state finances;

(2) and more particularly to amalgamate the economies of the new Rhineland territories in the West with those of the traditional Prussian territories in the East (East and West Prussia, Brandenburg).

ii) His financial reform and tariff of 1818:

(1) eliminated most if not all internal tariffs, tolls, and excise duties on trade between the Prussian territories, east and west, so that customs duties were now collected at the external frontiers of the area under Prussian jurisdiction (the old east and the new Rhineland west).

(2) Most raw materials were admitted free of duties:

- manufactured goods paid only a 10% *ad valorem* duty;
- and products from tropical countries paid 20% - 30% (for revenue purposes):

(3) so generally the Maassen tariff system was not very protectionist -- reflecting Prussia's still basically agrarian economy in its eastern heartland.

(4) Goods crossing Prussian territory in transit for an external destination, i.e., without being consumed within Prussia,

- paid a small duty (the equivalent of 1s 6d sterling per hundredweight), which,
- to quote E.J. Passant: it 'was a useful source of revenue as well as a weapon which could be used against small German neighbours'.⁴

(5) Maassen also made all taxes uniform within Prussia;

(6) and thus he effectively created an internal free-trade zone under Prussian jurisdiction, and in one step created a large unified market within Germany.

iii) **This Maassen tariff was never intended to be anything more than a financial reform:**

(1) but it produced strong economic pressures that ultimately led to a pan-German economic unification,
 (2) because of Prussia's control over all the major trade routes within the German Confederation, and because of Prussia's overwhelming economic power.

(3) Indeed in the following years, several small German enclaves were absorbed into the Maassen tariff, receiving a proportional share of customs revenues.

c) **the Prussian tariff union and rivalry with Bavaria and Saxony:**

i) **Prussia's neighbours, in the West**, were alarmed when the state of Hesse-Darmstadt joined the Prussian customs union in 1828.

ii) **two other major German kingdoms, Bavaria and Saxony**, responded by establishing rival customs unions with their own neighbours:

(1) South-German Union of Bavaria and Württemberg (but leaving out Baden to the west).

(2) Middle-German Commercial Union: Saxony, Hanover, Brunswick, and several other smaller states in central Germany (but without a common tariff, as in the Prussian system)

⁴ E.J. Passant, *A Short History of Germany, 1815-1945* (Cambridge, 1978), pp. 63-64.

iii) **Then in 1831, Hesse-Cassel joined the Prussian Customs union as well**, directly linking the eastern and western Prussian territories with a land bridge

iv) **In the early 1830s, continued rivalry of these three German customs unions finally led to a political compromise:**

(1) First, the Saxon-led Middle German Union collapsed, so that Saxony, Thuringia, and some others joined the Prussian-Hesse union (while Hanover opted to stay out).

(2) Finally, in January 1834, the Bavarian-led South German Union also joined the Prussian-Hesse customs union.

(3) This amalgamation of the three original customs unions into one virtual pan-German customs union was thus known by the German term Zollverein, which simply means 'Customs Union'.

3. **The German Zollverein: Market Unification**

a) **The German Zollverein:** took effect in January 1834

i) **it really meant the subordination of Saxony and Bavaria to the Prussian union:**

(1) and thus Prussia's Maassen tariff, customs, tax structure, fiscal system were all accepted as the common basis for the whole of the new German Zollverein.

(2) But each constituent member had to approve any subsequent changes: i.e., had veto powers

ii) **The Zollverein created one large unified market of 23.5 million people**, just slightly smaller than the post-Revolutionary French market (covering 162,870 square miles = 421,831.35 km²)

iii) **By 1844, several more important German states had joined:**

(1) Baden, Nassau, Frankfurt-am-Main, Luxembourg, Brunswick;

(2) But Hanover, Holstein, Mecklenburg in the north-west continued to remain aloof, as did the adjacent Hanseatic city states, on the Baltic and North Sea.

(3) though they in turn formed their own 'tax union'.

iii) **In subsequent years, more German states joined**, making the Zollverein larger and larger:

(1) in 1851 & 1866; and then

(2) with German Imperial Union (Reich) in 1871,

(3) but not until 1888 did the three old Hanseatic join: Hamburg (Germany's major port), Bremen (also a very major port, on the Atlantic), and Lübeck (on the Baltic)

iv) **The price that Prussia had paid to attract new members, however**, was in effect to continue allowing each member veto power in changing tariffs.

v) **But Austria was always excluded, and deliberately so**, from the Zollverein

(1) In 1866, Prussia went to war with Austria and defeated her alliance, giving Prussia unchallenged supremacy in Germany;

(2) Technically, the Zollverein treaties were dissolved with this war,

(3) but in fact the Zollverein continued to remain in force under Prussian dominance

(4) Prussia now formed the North German Confederation, which effectively annexed Hanover and neighbouring German territories to the Zollverein (except the Hanse city states).

(5) In 1867, the voting system was changed to favour Prussia, as I shall note further below.

vi) **Finally, after the Imperial Union of 1871, formally creating the German Empire:** as just noted above, the three Hanseatic city states of Hamburg, Bremen, and Lübeck joined, all during the 1880s.

b) **Thus there was one common tariff levied at the external frontiers:** and the customs receipts were distributed to the member states in proportion to their population.

i) **All remaining feudal or other internal tolls on roads and rivers were abolished:** to ensure internal free trade within Germany.

ii) **All coinages, weights, and measures were unified:** under the French metric system.

c) **Decision making processes under the Zollverein:**

i) **The original agreement required unanimous approval for all changes in the common tariff,** which thus meant that few changes were made.

ii) **Since Prussia then had a basically agrarian economy,** it favoured low industrial tariffs

- note that throughout the world most agrarian-based countries had favoured freer trade

- except, of course, the anomaly of Great Britain under the Corn Laws (to 1846)

iii) **'The New Zollverein':** of 1867

(1) In 1867, after formation of the North German Confederation, and thus before Imperial Union, the Zollverein was reorganized,

(2) so that future changes would be ratified by a majority vote weighted by population.

(3) That meant effectively that Prussia, with by far the largest population of any German state, gained full control over the Zollverein.

d) **Read Trebilcock, *The Industrialization of the Continental Powers, 1780 - 1914* (1981), pp. 37-50: on the German Zollverein** (which curiously ignores the role of the 1818 Maassen tariff):

i) **In my opinion,** his negative views -- contradicting more traditional views -- are overdone.

ii) **Though I might agree that the Zollverein was not in itself a direct causal force for economic growth,** it was nevertheless an important permissive factor, in breaking down trade barriers and expanding the potential market, especially in conjunction with the railroads (which certainly depended on the Zollverein).

4. **The Creation of the German Reich or Empire: Free Trade and the Return to Protectionism, 1871 - 1914**

a) **1871: the formation of the German Reich or Empire:**

i) **As a consequence of the Prussian victory in the Franco-Prussian war of 1870-71**, and indeed of prior Prussian victories over Austria and Denmark in the mid 1860s, the Prussian government succeeded in unifying the German states of the former German Confederation -- minus Austria -- into the German Reich or German Empire (the Second Empire).

ii) **The creation of this German Reich made Germany into a federal nation-state:**

(1) but called an 'Empire', under Prussian domination, with Prussia's capital of Berlin, in Brandenburg, as the new imperial capital,

(2) and Prussia's king as the new Emperor (Kaiser) of Germany

b) **Prussia dominated the economic policies of the new German Reich:** so that initially Germany was oriented towards freer trade or lower tariffs, as already indicated.

c) **The German currency: the Thalers and the mark**

i) **the currencies of the previous, pre-Reich German states were abolished:** most of them had been silver based currencies, most linked to the Vereinsthaler: a silver coin with 16.667 grams pure silver

(1) The Reichsthaler = 24 groschen

(2) The Speziethaler = 32 groschen

ii) **The Thaler:**

(1) a silver coin of Austrian origin, whose name derived from the great Bohemian silver mines of St Joachimstahl (Jachymov): opened in 1516

(2) The Counts von Schlick controlled the mines and minted silver coins called Joachimsthalers

(3) Along with the Germanic Thalers, other silver coins whose names were derived from the name of this silver mine were the Dutch daalder and the American dollar.

iii) **the gold-based mark (1871-873) became the new, official currency of Imperial Germany:** at a ratio of 3 new marks to the Vereinsthaler

c) **Economic Crises of the 1870s**

i) **with the combined agrarian, commercial, and industrial crises of the later 1870s**, both the agricultural and industrial interests in Prussia now began clamouring for protection.

ii) **Not only Prussia but other parts of Germany** --Saxony, Silesia, Bavaria, the Rhineland, etc.-- were now industrializing more rapidly;

iii) **and so the imperial government responded by shifting from free trade to protectionist policies**, with

higher tariffs, from the late 1870s and the 1880s: especially after the 1873 financial crisis and onset of the so-called 'Great Depression' of 1873 - 1896.

d) **We shall return to this issue when we examine industrial cartels in later 19th century Germany:** for cartels required protectionist tariffs, to be fully effective (in keeping out foreign competitors who would undermine the cartel).

C. GERMAN TRANSPORTATION: RAILWAYS AND STEAM SHIPPING

1. German Railways and German Economic Development, 1839 - 1914

a) **German railways, it has been said, completed what the Zollverein (1834) had begun:**

i) **namely, in creating a unified national economy,**

(1) in providing a foundation for rapid industrialization after 1850,

(2) allowing Germany (Prussia, Bavaria, Saxony) to overtake France and Belgium (way ahead of Germany in 1850),

(3) but even eventually Britain in key industrial fields: steel, chemicals, electrical products

ii) **The role of the Zollverein may be in dispute,** but not that of railroads.

b) **German Railway Construction:**

i) **German railway building began in 1839,** in the Kingdom of Saxony, with the Leipzig-Dresden railway line.

ii) **Other German states then followed with their own railway lines,** between 1840 and the 1880s (whose details need not concern us here).

iii) **By 1910, Germany had 90% more railway tracks than Britain,** and 50% more than France (see table on screen);

iv) **but Germany did not have a** greater railway density than Great Britain.

2. The German State Governments and Railways

a) **Government Financing of Railroad Construction:**

i) **In 1838-39, following the example of the French railway law of 1836,**

(1) the governments of both Saxony and Prussia enacted legislation to guarantee the interest on railway bonds,

(2) thus allowing private railway companies to borrow capital much more cheaply.

ii) **Various state governments also built their own railway lines:**

(1) for military and political reasons, with intense inter-state rivalry;

(2) sometimes also for reasons of economic development, when private enterprise unwilling or unable to build such lines.

iii) **The General result was overbuilding of railways, and mismanagement:**

(1) By the time of imperial union in 1871, Germany had 63 different railway systems: a weird mixture of state built lines, private built lines, state-subsidized private lines, privately built but state operated systems, and

so on.

(2) and thus with no overall national coordination, and much inter-state duplication.

c) The German Imperial Reich and Railroads:

i) **With Imperial Union in 1871**, the new imperial government at Berlin tried to take over all the national railways;

ii) **but that project failed**, because the other German states feared Prussian domination and centralization from Berlin.

iii) **Nevertheless, after Imperial Union, the state government of Prussia**, whose capital was also Berlin, itself adopted a concerted policy of state ownership within its own jurisdiction.

(1) During the depression of the 1870s, it began buying up railway lines cheaply.

(2) By 1910, it had taken over all railway lines within Prussian jurisdiction: about 2/3rds of the German total.

iii) **That was enough, finally, to give the Prussian government effective control over the entire German system:** but not until the very late 19th century.

d) Railway Policies of the Prussian Government:

i) **Note that Prussia developed the most efficient**, best run railways in Germany.

ii) **The Prussian government, after Imperial Union, used the railway rate structure to foster industrialization (as a form of mercantilism), by providing:**

(1) low, preferential rates for agriculture, for transporting raw materials to export manufacturers, for shipping manufactured goods to port towns for export;

(2) medium rates for transporting domestic manufactured goods within German market;

(3) finally, much higher rates on transport of manufactured goods coming from outside of Germany.

iii) **The Prussian government also co-ordinated rail traffic on a national basis:**

(1) to reduce wasteful duplication, and made them quite efficient.

(2) This was not so true for other parts of Germany, however.

3. General Economic Consequences of German Railroads:

a) **relatively much greater impact than in Britain or France:**

i) **chiefly because the transportation facilities in Germany had been so much less developed**, especially in the East,

ii) **and also**, because there was a far greater land mass to connect up.

b) **River transport:**

i) **Nevertheless, we must also note that many German states had developed river and canal transport**

systems along with railways, especially along the Rhine, with a considerable division of labour.

ii) **Collectively, the river-canal systems probably handled more cargoes than did the railways**, at least until the 1860s or so.

c) **Major stimulus, as in Britain, was for the rapid development of the coal, iron, and steel industries:**

i) **especially in linking up the widely scattered coal and iron deposits**, located chiefly along Germany's periphery:

(1) in the east, the coal and iron fields of Silesia;

(2) in the west, the coal-fields of the Ruhr -- a tributary of the Rhine in the NW, the Westphalian Rhineland region, and the Saarland in the west and SW;

(3) and the iron fields of Lorraine (most of which were taken from France in the Franco-Prussian War of 1870-1, as already noted).

ii) **As a result, the Rhineland-Westphalia and Saxony-Silesia:** became the most heavily industrialized regions in continental Europe.

iii) **Trebilcock:** states that railway construction accounted for 25% of German iron production in the 1850s.

d) **For agriculture:**

i) **railways also provided the major factor for the expansion of the East German grain estates**, making Prussia one of Europe's major grain producers;

ii) **and in general for promoting enclosures and the general commercialization of agriculture**, from the 1850s.

e) **Otherwise**, refer back to our discussion of the impact of railways on the British economy to see how railways promoted economic development.

4. Steam Shipping and German Foreign Trade

For independent reading only; read Clive Trebilcock, *The Industrialization of the Continental Powers, 1780-1914* (London and New York: Longman, 1981), chapter two, on Germany.

Railway Tracks Open at Decennial Intervals, 1840 - 1914:
in kilometres
Britain, Belgium, France, Germany, and Russia*

Year	Britain	Belgium	France	GERMANY	Russia
1840	2,390	335	498	468	27
1850	9,791	903	2,914	5,856	500
1860	14,594	1,730	9,166	11,088	1,625
1870	21,545	2,897	16,464	18,875	10,731
1880	25,045	4,112	23,233 ^a	33,836^b	22,864
1890	27,810	4,525	33,278	42,868	30,594
1900	30,061	4,591	38,107	51,675	53,231
1910	32,163	4,678	40,483	61,205	66,579
1913	32,613	n.a.	40,768	63,375	70,153

* 1 km. = 0.6214 miles.

a. Excluding Alsace-Lorraine: ceded to Germany in 1871

b. Including Alsace-Lorraine: acquired from France in 1871

Sources: B.R. Mitchell and Phyllis Deane, *Abstract of British Historical Statistics* (Cambridge, 1962), pp. 225-26; Carlo Cipolla, ed., *Fontana Economic History of Europe, Vol. IV:2: The Emergence of Industrial Societies* (London, 1973), pp. 790, 794.