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HISTORICAL AND CONTEMPORARY EVOLUTION OF INTERNATIONAL TRADE: FROM MERCANTILISM TO THE PLATFORM ECONOMY

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Historical and Contemporary Evolution of International Trade: From Mercantilism to the Platform Economy

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Abstract/Résumé

This article provides a comprehensive historical and contemporary analysis of how international trade theory and practice have developed. It begins with the classical economic theories of the 17th to 19th centuries – spanning Italian mercantilists like Antonio Serra, French Physiocrats such as François Quesnay, English classical economists like Adam Smith and David Ricardo, and German protectionist thinkers like Friedrich List – and examines how these early thinkers understood trade in goods versus services. The narrative then traces major shifts through the 19th and 20th centuries, highlighting the rise of industrial trade, changes in theory, and the institutionalization of global trade rules. Finally, it connects these historical foundations to the platform economy of the 21st century, in which technology and data (often dubbed "the new oil") have dramatically reshaped what is tradable. Throughout, we discuss the surge in services trade – including the persistent U.S. surplus in services – and the challenges of measuring trade in an era of digital platforms. These measurement issues, we argue, are not mere statistical quirks but reflect deeper transformations in the global economy. The discussion proceeds in a chronological yet thematic flow, tying together the major milestones in the evolution of trade and maintaining a scholarly perspective on each phase.

Cet article propose une analyse historique et contemporaine complète de l'évolution de la théorie et de la pratique du commerce international. Il commence par les théories économiques classiques du 17e au 19e siècle - couvrant les mercantilistes italiens comme Antonio Serra, les physiocrates français comme François Quesnay, les économistes classiques anglais comme Adam Smith et David Ricardo, et les penseurs protectionnistes allemands comme Friedrich List - et examine comment ces premiers penseurs comprenaient le commerce des biens par rapport à celui des services. Le récit retrace ensuite les principales évolutions au cours des XIXe et XXe siècles, en soulignant l'essor du commerce industriel, les changements théoriques et l'institutionnalisation des règles du commerce mondial. Enfin, il relie ces fondements historiques à l'économie de plateforme du XXIe siècle, dans laquelle la technologie et les données (souvent surnommées « le nouveau pétrole ») ont radicalement remodelé ce qui est échangeable. Tout au long de l'ouvrage, nous discutons de l'essor du commerce des services - y compris de l'excédent persistant des États-Unis dans ce domaine - et des défis que pose la modélisation du commerce à l'ère des plates-formes numériques. Selon nous, ces problèmes de mesure ne sont pas de simples bizarreries statistiques, mais reflètent des transformations plus profondes de l'économie

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mondiale. La discussion se déroule de manière chronologique et thématique, en reliant les principaux jalons de l'évolution du commerce et en maintenant une perspective scientifique sur chaque phase.

Keywords/Mots-clés: international trade, global economy, evolution, economic theories, digital transformation / commerce international, économie mondiale, évolution, théories économiques, transformation numérique

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1 Introduction

International trade has been a central feature of economic thought and policy for centuries, evolving from mercantilist contests over gold and silver to today's digital exchanges of data and services. This article provides a comprehensive historical and contemporary analysis of how international trade theory and practice have developed. It begins with the classical economic theories of the 17th to 19th centuries – spanning Italian mercantilists like Antonio Serra, French Physiocrats such as François Quesnay, English classical economists like Adam Smith and David Ricardo, and German protectionist thinkers like Friedrich List – and examines how these early thinkers understood trade in goods *versus* services. The narrative then traces major shifts through the 19th and 20th centuries, highlighting the rise of industrial trade, changes in theory, and the institutionalization of global trade rules. Finally, it connects these historical foundations to the platform economy of the 21st century, in which technology and data (often dubbed "the new oil") have dramatically reshaped what is tradable. Throughout, we discuss the surge in services trade – including the persistent U.S. surplus in services – and the challenges of measuring trade in an era of digital platforms. These measurement issues, we argue, are not mere statistical quirks but reflect deeper transformations in the global economy. The discussion proceeds in a chronological yet thematic flow, tying together the major milestones in the evolution of trade and maintaining a scholarly perspective on each phase.

2 From Mercantilism to Classical Theories of Trade

2.1 Mercantilist Origins and the Early View of Trade

In the 1600s, mercantilism dominated European economic policy. Mercantilist thinkers saw international trade largely as a zero-sum game where one nation's gain was another's loss. National wealth was equated with holdings of gold and silver, so governments were advised to promote exports and restrict imports to achieve a trade surplus (accumulating bullion). Antonio Serra, an Italian economist writing in 1613, produced one of the first systematic analyses of a national economy under this mercantile framework. In *Breve Trattato* (1613), Serra examined how a kingdom without mines could "abound in gold and silver" by fostering manufacturing and commerce to attract bullion via trade (Serra, 1613). He argued that diversified industry and trade networks could generate a surplus of exports over imports, bringing precious metals into the country. This insight – that trade could enrich a nation even absent natural resource endowments – was a cornerstone of mercantilist thought. Mercantilists thus primarily conceived of trade in tangible goods (such as textiles, spices, or metals) whose export could directly increase national treasure. Services, in their view, did not figure prominently except insofar as they facilitated goods trade (e.g. shipping services were a means to trade goods, not an end in themselves). The mercantilist school held that value was created at the point of exchange – by selling a product for more than it cost – implying that commerce itself "created" value by yielding profit in monetary terms. In other words, mercantilists valued trade as a source of wealth through favorable exchange, and policies often aimed to monopolize lucrative trades or establish colonies to secure resources and markets.

2.2 Physiocrats and the Primacy of Production

In the 18th century, the French Physiocrats challenged mercantilist ideas. Led by François Quesnay, the Physiocrats were the first to systematically analyze the economy with an emphasis on productive activity rather than exchange. Quesnay's famous *Tableau Économique* (1758) portrayed the economy as a circular flow and posited that all new wealth originates from agriculture. They viewed agriculture as the sole sector producing a *net surplus*, while manufacturing and services were considered "sterile" – merely transforming or consuming the agricultural surplus. As one source summarizes, *"all 'industrial' and non-agricultural labors were 'unproductive appendages' to agricultural labor"*. In Physiocratic thinking, trade was not a source of wealth per se; at best it redistributed the fruits of agriculture. This led them to sharply differentiate goods from services: only goods (especially agricultural goods) added to national wealth, whereas services (and even industrial goods) were viewed as circulating existing wealth rather than creating it. Despite this dismissive view of non-agricultural sectors, the Physiocrats favored economic freedom and minimal interference. Thinkers like Quesnay and Anne-Robert Turgot advocated laissez-faire policies, including low tariffs and free trade in grain. They argued that price controls or trade restrictions on agricultural goods would only diminish the surplus generated by farming. In effect, the Physiocrats supported free trade (aligning with later classical liberals) but for somewhat different reasons: to them, free exchange allowed the agricultural sector's productive potential to circulate unhindered. Services, meanwhile, remained an afterthought – necessary for commerce but not wealth-generating in themselves. This early dichotomy (productive goods sectors vs. unproductive services) would influence economic thought for some time.

2.3 Adam Smith and the Case for Free Trade in Goods

Classical economics proper is often said to begin with Adam Smith's *The Wealth of Nations* (1776). Smith built a powerful critique of mercantilism and a new theory of trade based on specialization and *absolute advantage*. Rejecting the notion that wealth is simply gold, Smith defined a nation's wealth by its production of goods and services – the total output of its economy – and he saw trade as a positive-sum mechanism to increase that output (Smith, 1776). In Smith's view, countries should specialize in producing the goods in which they are more efficient than others, and trade for the rest. He famously wrote that *"it is the maxim of every prudent master of a family, never to attempt to make at home what it will cost him more to buy"* – arguing that if a foreign country can supply a commodity cheaper than one's own country can produce it, it is better to import it (Smith, 1776). By analogizing the nation to a household that buys rather than makes things that would be costly to produce internally, Smith made a compelling case for free trade based on efficiency. This was a revolutionary departure from mercantilist zero-sum logic: in Smith's framework, all parties could gain from trade through higher productivity and lower prices. Notably, Smith did not deeply analyze *international* services trade, but he did discuss the role of what we'd call the service sector. He recognized services like retail, transport, or domestic work, yet he classified many of them as

"unproductive labor" in terms of not creating tangible, lasting output. For example, a menial servant's labor dies with the service rendered, in contrast to a manufacturing laborer who produces a vendible good (Smith, 1776). Thus, while Smith expanded the concept of wealth to include the production of both goods and services domestically, he implicitly valued goods trade more because goods contributed to accumulable capital. He did, however, praise the contribution of services that facilitated commerce – such as merchants and shippers – as part of the division of labor that extended across borders. Overall, classical free trade theory as conceived by Smith was centered on goods, with services playing a supporting role in enabling the flow of goods.

2.4 Ricardo and Comparative Advantage

David Ricardo further refined classical trade theory in the early 19th century. In *On the Principles of Political Economy and Taxation* (1817), Ricardo introduced the law of *comparative advantage*, demonstrating that it can be mutually beneficial for two nations to trade even if one of them is more efficient in producing everything. Ricardo's famous example involved England and Portugal trading cloth for wine: even if Portugal could produce both cloth and wine with less labor than England, it should specialize in the product where its relative efficiency was greatest (wine) and import the other (cloth) from England. England, though absolutely less efficient, would specialize in cloth where its relative disadvantage was smallest. Comparative advantage provided a fundamental theoretical justification for free trade, suggesting that global efficiency (and total output) increases when nations specialize according to comparative costs. This theory assumed labor as the sole factor and considered goods as the outputs. Implicitly, Ricardo's model was a two-good, two-country framework – notably, both outputs were tangible goods. Services did not appear in his canonical example; international services exchanges were marginal in Ricardo's time and conceptually harder to fit into the simple labor theory of value. Nonetheless, the principle can apply to services as well – and indeed modern economists would later extend comparative advantage to services trade – but classical economists like Ricardo mostly discussed trade in commodities like textiles, grain, wine, etc. Still, by asserting that trade is governed by relative productivity differences, Ricardo shifted the conversation firmly toward *production* as the source of gains from trade, rather than mercantile exchange trickery. This solidified the classical view: international trade was beneficial and guided by cost advantage in production, primarily of goods. Services were scarcely theorized in international contexts, partly because many services (e.g. personal services) were non-tradable with the technology of the era. Those that were tradable, such as shipping or finance, were considered part of the facilitation of goods trade or as part of factor income flows (interest, etc.), rather than central to theory.

2.5 Goods vs. Services in Early Theory

To summarize the classical era: Mercantilists saw wealth via trade of goods (aiming for surpluses) and gave little importance to services except as adjuncts to trade. Physiocrats virtually ignored international trade in services by deeming non-agricultural sectors unproductive. The English classical economists broadened wealth to all production and advocated goods trade liberalization, but they too focused on material goods as the main tradable outputs driving growth. Indeed, early national accounts and economic thinking struggled to conceptualize services as exports – an issue that, as we shall see, would persist well into the 20th century. At this stage, the dominant mental model was that goods cross borders, services do not (with the exception of merchants, transporters, and perhaps financial flows). This goods-centric view would gradually be challenged as the global economy evolved.

3 19th Century Developments: Industrialization, Free Trade and Protection

3.1 The Industrial Revolution and Trade Expansion

The 19th century brought industrialization, which dramatically changed international trade patterns and theories. Steam power, mechanization, and improvements in transportation (railroads, steamships) lowered the cost of moving goods and expanded the volume of trade. By the mid-1800s, Britain – the first industrial nation – embraced a unilateral policy of free trade. The repeal of the Corn Laws in 1846 symbolized Britain's shift from mercantilist protection of agriculture to liberal trade, reflecting Smithian ideas. As industrial output grew, Britain pushed for open markets abroad to export manufactured goods and import raw materials. Other European powers and the United States, however, did not immediately follow suit. The composition of trade was changing: industrial goods (textiles, machinery, steel products) became increasingly traded, while many less-industrialized regions exported primary commodities (cotton, wheat, copper, etc.) in return. This created an international division of labor between industrial core economies and commodity-producing peripheries. Services in the international arena at this time were largely related to shipping, insurance, and finance, which facilitated the burgeoning goods trade (e.g. London's financial services financed global commerce). There was also international migration of labor and capital, but when it came to "trade" per se, policy and theory still overwhelmingly centered on goods.

3.2 Classical Theory's Evolution – John Stuart Mill and Others

Within classical economics, thinkers such as John Stuart Mill refined trade theory by addressing demand considerations (reciprocal demand) in determining trade prices. The basic case for free trade remained influential; by late 1800s, it was almost an economic orthodoxy in Britain

that free trade maximized national and global prosperity (Irwin, 1996). At the same time, economists and policymakers observed that not all countries were benefiting equally. The concept of terms of trade emerged to denote the relative prices of exports to imports, and concerns arose (later formalized by economists like Jagdish Bhagwati in the 20th century) that a country relying on commodity exports could face declining terms of trade over time. In the 19th century, however, these ideas were only nascent. One debate that did emerge clearly was over protectionism for infant industries, an idea hinted at even in Alexander Hamilton's 1791 *Report on Manufactures* in the U.S., and taken forward by a German economist who would directly challenge the Smith-Ricardo free trade doctrine – Friedrich List.

3.3 Friedrich List and the Nationalist Critique

In 1841, Friedrich List published *The National System of Political Economy*, which critiqued the cosmopolitanism of British classical economics. List argued that free trade might benefit the already industrialized nation (Britain) but would impede latecomers in developing their own industries. He observed that Britain itself had used protectionist measures in earlier times to nurture its industries and only championed free trade after becoming industrially dominant – a hypocrisy he highlighted. As List famously noted, *"Any nation which by means of protective duties and restrictions on navigation has raised her manufacturing power to such a degree of development that no other nation can sustain free competition with her, can do nothing wiser than to throw away these ladders of her greatness, to preach to other nations the benefits of free trade"* (List, 1841). In List's view, economic development required a strategic approach: nations should use protectionism temporarily to build up manufacturing capabilities, and only later, when strong enough, revert to free trade. He outlined a progression whereby a less advanced country might at first import freely to stimulate agriculture, then protect infant industries until it catches up, and eventually join a regime of free trade once it can compete on equal footing. This dynamic perspective – trading regimes evolving over the development cycle – stood in contrast to the static efficiency gains of Smith and Ricardo.

List's ideas found receptive audiences in the United States and Germany, where industrialization was underway but British industry still dominated many markets. Indeed, the 19th century witnessed a mix of free trade and protection: Britain and some smaller European nations (the Netherlands, for instance) were broadly free-trading by mid-century, whereas Germany, the US, and others imposed tariffs to foster industries (especially after 1870 in the case of Germany, and via the Tariff of 1861 and later high Civil War tariffs in the US). Empirically, world trade expanded rapidly in the 19th century; by some estimates the ratio of global trade to world GDP roughly doubled or more between 1800 and 1913 (Findlay & O'Rourke, 2007). Much of this was merchandise trade spurred by industrial output and colonial networks. Colonialism itself forced open markets and ensured raw material supplies, often through unequal arrangements – a factor not lost on critics like List who noted that "free trade" under British hegemony could entrench global inequalities in manufacturing capacity.

3.4 Services in the 19th Century Context

During the 19th century, international services remained relatively limited in scope. One significant form of "invisible trade" was shipping services: e.g., British ships carried freight for many nations, essentially exporting maritime transport services (often counted then as part of balance of payments in the "invisible" account). Financial services also grew in importance – London became an international financial center, handling underwriting, insurance, and lending globally. For instance, a British bank financing a railroad in Argentina can be seen as an export of financial services. However, these activities were typically ancillary to goods and investment flows and were not the primary focus of trade theory or policy. The gold standard (1870s-1914) and capital flows allowed for a high volume of international lending and investment, but economists of the time still conceived of "trade" largely as trade in goods. The first systematic national accounts in the early 20th century would later categorize trade in *goods* versus *services*, but in the 1800s the notion of measuring "services exports" was in its infancy. Nonetheless, by century's end, services such as international tourism had begun (the European elite taking grand tours, etc.) and intellectual property flows existed in the form of book royalties or patent fees – but these were minor compared to the colossal intercontinental trade in grains, textiles, metals, and manufactured wares.

The 19th century established two competing visions of trade: the cosmopolitan free trade view of Smith and Ricardo, versus the nationalist development view of List. Trade practices oscillated between periods of liberalization (the mid-century Pax Britannica) and protectionist backlash (many countries raised tariffs in the late 19th century, especially after the 1870s global agricultural price drop). Yet, regardless of trade policy, industrialization ensured that goods dominated international exchanges. Services, while growing in absolute terms (e.g. shipping, banking), were not yet at the forefront of trade debates or statistics. By 1900, the intellectual groundwork was laid for understanding trade as an engine of growth – but primarily through the exchange of physical products. The stage was set for the 20th century, which would both globalize goods trade further and, eventually, broaden the conception of tradable outputs to include services and knowledge.

4 The 20th Century: Globalization, Trade Theory Expansions, and the Advent of Services Trade

4.1 Interwar Turbulence and Postwar Order

The early 20th century brought upheavals that deeply affected trade. World War I (1914–1918) shattered the first age of globalization, as nations imposed trade barriers and blockades. The interwar period saw erratic trade policies – from the roaring 1920s with some recovery in trade, to a sharp turn inward after the 1929 crash. The Great Depression prompted protectionist cascades such as the U.S. Smoot-Hawley Tariff of 1930, and global trade contracted severely

in the early 1930s. By the late 1930s, international trade as a share of output was still far below pre-WWI levels. World War II then caused another collapse in normal commerce. In the aftermath of WWII, however, there was a strong commitment to rebuild an open trading system as part of the new international economic order. The General Agreement on Tariffs and Trade (GATT) was established in 1947, creating a multilateral framework for reducing tariffs and expanding trade. Over a series of rounds (1947 through the Kennedy Round in 1960s, Tokyo Round 1970s, etc.), the GATT succeeded in dramatically lowering tariff barriers on manufactured goods among Western economies. This paved the way for an unprecedented expansion of world trade in the postwar decades. World merchandise trade volume grew on average around 7% per year from 1950 to 1973, outpacing output and leading to rising trade/GDP ratios worldwide (WTO, 2020). Much of this growth was fueled by industrial goods: automobiles, machinery, chemicals, consumer electronics and more became heavily traded. The formation of the European Common Market (later EU) in 1957 further liberalized trade within Europe. Japan emerged as an export powerhouse by the 1970s, followed by newly industrializing economies in East Asia. The world economy's center of gravity in trade began shifting: whereas Europe dominated 19th-century trade, by late 20th century East Asia and North America were major trading regions (Warin & Stojkov, 2024; Warin, 2025).

4.2 Advances in Trade Theory – Factor Endowments and Beyond

Twentieth-century economists built on classical theory to better explain the patterns of trade observed. In the 1930s, the Heckscher-Ohlin (H-O) model posited that countries export goods that use their abundant factors of production intensively, and import goods that use their scarce factors. Thus, a capital-rich country would export capital-intensive goods (e.g. machinery) and import labor-intensive goods (e.g. textiles) from labor-abundant countries. The H-O model, later formalized by Paul Samuelson and others, introduced *factor endowments* as a key determinant of comparative advantage, moving beyond Ricardo's one-factor story. Interestingly, this theory could conceptually include services: for example, a country well-endowed in highly educated labor might export education or engineering services. However, practical application still leaned toward goods – classic tests of H-O looked at trade in manufactures vs. raw materials. In fact, an empirical puzzle known as the Leontief Paradox (Leontief, 1953) found that the United States (then capital-abundant) exported labor-intensive commodities and imported capital-intensive ones, contrary to H-O. One resolution suggested that U.S. exports were intensive in human capital and technology – hinting that the definition of "factor" might need to include skilled labor or innovation. This was an early sign that *knowledge-based advantages* (important in services) were becoming relevant.

By the 1980s, shortcomings in traditional trade theory in explaining real-world patterns (such as massive two-way trade in similar goods between similar countries) led to the development of the New Trade Theory. Pioneered by economists like Paul Krugman, this approach incorporated increasing returns to scale and monopolistic competition. It showed how countries might

trade large volumes of similar manufactured goods (e.g. cars for cars) because consumers demand variety and because large-scale production lowers costs (Krugman, 1979). This theory justified trade between countries with similar factor endowments – a phenomenon that old comparative advantage struggled with. Again, the discussion was mostly about goods (industries where scale economies prevail), but one can see how it could apply to certain services (e.g. entertainment or software, where scale and variety also matter). Indeed, the concept of intra-industry trade was expanded to services later (for instance, countries exchanging tourists or business consulting services), but at the time the focus was on manufacturing.

Another important theoretical development was recognizing the role of technology and product cycles. In the 1960s, Raymond Vernon's *product cycle hypothesis* proposed that new high-tech products are initially produced and exported by the innovating country, then eventually production shifts to lower-cost locations as the technology matures, altering trade patterns. This explained how, say, the United States could start as an exporter of a new electronic gadget and later become an importer of the same item produced abroad. This too primarily described goods, but one can see parallels in services (for example, new financial services might originate in New York or London and later be provided by offshore centers). By the late 20th century, economists also developed models for trade in tasks and offshoring (Kojima, 2000; Grossman & Rossi-Hansberg, 2008), foreshadowing the fragmentation of production where services components of production (design, R&D, back-office work) could be located abroad.

4.3 Rise of Services and "Invisibles"

Through most of the 20th century, services gradually took a larger role in economies. In advanced economies, the share of GDP coming from services (healthcare, education, retail, finance, etc.) climbed to well over 50% by the mid-late century. However, on the international stage, services trade remained limited for much of the century due to technological and regulatory barriers. Many services (like healthcare or personal services) required proximity and thus were inherently local. Others, like telecommunications or banking, were often state-regulated monopolies behind national borders. That said, certain services were always part of international transactions: tourism grew in the 20th century as travel became faster and cheaper (making cross-border *consumption of services* possible when people traveled abroad). International telephone and postal communications existed, as did intellectual property royalties (a form of services trade related to licensing technology or artistic content). By the 1980s, with the rise of information technology, some business services (like data processing or customer support) began to be offshored on a small scale. Still, when the postwar trade regime was built, services were notably *left out*: the GATT dealt only with goods (merchandise trade). It wasn't until the Uruguay Round negotiations (1986-1994) that countries created a parallel framework for services – the General Agreement on Trade in Services (GATS) – which came into force in 1995 with the establishment of the World Trade Organization. The GATS recognized four

"modes" of supplying services internationally: (1) cross-border delivery (e.g. software consultancy provided remotely via telecom), (2) consumption abroad (e.g. tourism, where the consumer travels to the provider's country), (3) commercial presence (a company sets up a foreign affiliate to deliver services in the host country), and (4) movement of natural persons (service providers temporarily travel to the client's country). This categorization itself reflected the complex nature of services trade. Unlike goods, services could not simply be put in a container and shipped; they often required movement of people or investment in foreign subsidiaries.

By the late 20th century, we see services emerging as a new frontier of trade. Financial services were liberalized in many countries, allowing banks and insurance firms to expand overseas. For example, a U.S. bank could open branches in Asia (Mode 3 trade in services) or trade financial products across borders. The advent of the internet (commercialized in the mid-1990s) suddenly opened enormous possibilities for digitally delivered services – a point we return to in the next section. But even before the internet, the seeds of a more service-oriented global economy were visible: multinational corporations were increasingly separating R&D, design, marketing, and other service functions from manufacturing, and sometimes locating those in different countries. For instance, a tech company might do product design in the U.S. but manufacturing in Malaysia – implying that the design "service" is effectively an export of the U.S., embedded in the value of the imported gadget. Yet statistical systems did not fully capture this, often still recording only the tangible good crossing the border.

4.4 Toward the 21st Century – Global Value Chains

A crucial development in the late 20th century was the rise of global value chains (GVCs), whereby different stages of production are split across countries. Enabled by cheaper communication and transportation, firms started to offshore not just production of parts, but also services like customer support or accounting to countries like India (in the 1990s). Trade economists like Ronald Jones and Henryk Kierzkowski discussed this "fragmentation" of production, while others like Richard Baldwin later described it as the second unbundling (the first unbundling being the separation of production and consumption locations in the 19th century, and the second being the separation of different production stages in late 20th) (Baldwin, 2016). This meant that trade in intermediate inputs – both goods and services – grew rapidly. For example, car makers would import components from multiple countries; simultaneously, they might outsource some design work or IT services abroad. By 2000, services accounted for a growing share of the value-added in traded goods (often the high-value portions like design, branding, logistics). This "servicification" of manufacturing meant that the distinction between goods and services in trade was becoming less clear-cut. Still, in raw statistics, goods trade dominated. At the turn of the millennium, global exports of goods were about $6 trillion, whereas recorded exports of services were about $1.5 trillion (WTO, 2001) – roughly 20% of the goods figure.

In sum, the 20th century cemented the idea that free trade in goods is beneficial and led to historically low barriers on manufacturing trade by century's end. It also set the stage for services to become a larger part of international exchange, especially through digital means and multinational enterprise operations. Trade theory evolved to incorporate new realities (scale economies, product differentiation, factor movements), but it was still largely rooted in the exchange of *products* – whether tangible goods or, increasingly, intangible outputs. As we move into the contemporary era, the implications of those intangibles and the technology that enables them become paramount.

5 The Platform Economy and Data as the "New Oil": Trade in the 21st Century

In the 21st century, the global economy has been transformed by digital technology. The rise of the platform economy – dominated by companies that create digital platforms connecting users, providers, and advertisers across the world – is redefining international trade. Firms like Google, Amazon, Facebook (Meta), Microsoft, Alibaba, and others operate platforms where value is created through networks and data. In this environment, it is often said that "data is the new oil," highlighting how critical data has become as a resource fueling economic activity. This phrase encapsulates the idea that data drives productivity and competitive advantage in much the same way that petroleum powered the industrial economy. However, unlike oil, data can be replicated and transported globally with ease and at near-zero cost. This has profound implications for trade: many digital services and products can be delivered instantaneously across borders, and the marginal cost of serving an additional foreign user is often negligible. Thus, technology has greatly increased the *tradability* of services and information products.

5.1 Digital Platforms and Global Services

Thinkers like Karim Lakhani have studied how technology and crowdsourcing platforms enable new forms of global economic interaction. Lakhani and co-author Marco Iansiti, in *Competing in the Age of AI* (2020), describe how digital firms leverage algorithms, artificial intelligence, and user data to scale rapidly and compete in multiple markets (Iansiti & Lakhani, 2020). A key insight is that digital platforms can provide services globally without a heavy physical presence: for example, Facebook provides social networking services to users in virtually every country from servers mostly in the U.S. Similarly, Amazon Web Services (cloud computing) allows a client in South America to instantly use computing power from data centers in another continent. These are essentially exports of services (or possibly of data usage rights) that do not show up as a container crossing a border. The platform model often exhibits strong network effects – the service becomes more valuable as more users join – leading to winner-takes-most outcomes in global markets. As a result, a few large platform firms have amassed international user bases and revenue streams, often dominating cross-border data flows and

digital trade. Lakhani's work exemplifies how technology has broken many of the traditional constraints on trading services: via platforms, freelance programmers in Asia can work for clients in Europe (e.g., Upwork or other gig platforms), medical radiologists in India can analyze scans for hospitals in the US, and graphic designers in Argentina can sell digital art to customers in Australia. Geography has become less limiting for services trade, at least for those services that can be digitized or provided remotely. This has dramatically altered economic dynamics and opportunities for countries. For instance, India has become a major exporter of IT and business process services, leveraging its skilled workforce and telecommunications infrastructure. By 2020, India's exports of software and IT services were on the order of $100 billion annually (NASSCOM, 2020), a figure that would have been inconceivable without the internet and fiber-optic cables enabling real-time global collaboration.

5.2 Platforms and the Redefinition of "Product"

The platform economy blurs the line between goods and services. Many digital products are essentially services – streaming media, software-as-a-service, online search and social media (which are advertising-supported services). Even physical goods trade is facilitated by platforms (like Amazon Marketplace or Alibaba) that themselves are service providers connecting buyers and sellers globally. Data plays a dual role: it is both an input (collected from users to improve services or target ads) and an output (sold or analyzed for value). Crucially, data can cross borders without tariffs or often without any official record. This raises new questions: Is the transfer of user data to a foreign server a trade flow? When a machine learning model trained on global data is deployed in multiple countries, how do we account for that? Traditional trade statistics, and the classical theories, have no ready answer – these phenomena simply did not exist at this scale before. Thus, technology is forcing economists and statisticians to rethink what constitutes international "trade."

5.3 Services Trade on the Rise

One clear trend in the contemporary period is the growing share of services in international trade. According to WTO data, global exports of commercial services reached $6.1 trillion in 2019 (WTO, 2020), which was about 24% of total exports of goods and services combined. While the COVID-19 pandemic in 2020 disrupted travel (a major service export), other areas like digitally delivered services proved resilient. High value-added services – such as financial services, intellectual property licensing, education, and professional consulting – have become significant exports for many advanced economies. The United States is a prime example: the U.S. consistently runs a *surplus* in trade in services, even as it runs a large deficit in goods trade. For instance, in 2019 the U.S. had a services trade surplus of roughly $249 billion (BEA, 2020), reflecting strengths in sectors like finance, tech, entertainment (royalties from Hollywood and music), and business services. This surplus has persisted for decades, offsetting a portion of the merchandise trade deficit. The composition of exports for developed countries

has shifted toward services and intellectual property. Smaller economies too have joined the fray – Ireland and India, for example, export substantial services (Ireland in business and IP services, India in IT and back-office services). Moreover, even developing countries can export certain services if they have the human capital – the Philippines became a top exporter of call-center and business process outsourcing services in the 2000s, earning foreign exchange without shipping physical goods. The rise of services trade validates some of the predictions from the late 20th century: that improved telecommunications and IT would allow more of the service sector to be globally contestable (Jensen, 2011).

However, the surge in services trade also brings challenges. Unlike goods, services are harder to measure and regulate. Many services require movement of people (e.g. tourism or international education where students travel), which involves immigration and visa policies rather than tariffs. Digital services raise issues of data privacy and localization (some countries want data kept domestically, effectively a non-tariff barrier to data flows). The tax regimes for services can also differ (e.g., the current debates on how to tax digital services provided by foreign tech giants). All these factors mean the growth of services trade is not just an economic phenomenon but also a regulatory and diplomatic frontier.

6 The Challenge of Measuring Services and Data in Trade Statistics

With the transformation of what and how we trade, measurement has struggled to keep up. Traditional trade statistics were designed for a world of tangible goods crossing borders with customs inspectors recording values. Services trade measurement is considerably more complex. As noted, the GATS defined four modes of supply precisely because services can be delivered in varied ways that blur the lines of residency and cross-border movement. A striking fact is that a large portion of international services delivery occurs through commercial presence (Mode 3) – essentially, a company sets up a local subsidiary in the foreign market to supply services there. For example, when a U.S. consulting firm opens an office in Brazil to serve Brazilian clients, the revenues are counted as part of Brazil's domestic service output, not as a U.S. export – even though it is a U.S.-owned firm bringing its know-how to Brazil. In 2014, it was estimated that over half of all international services sales were delivered via foreign affiliates (Mode 3), about 55% of total trade in services when broadly measured. Cross-border services (Mode 1), like a software company emailing code or a call center handling calls from abroad, made up about 30%. The remainder were consumption abroad (Mode 2, e.g. tourism) at ~10%, and movement of people (Mode 4) at a few percent. These figures show that official balance-of-payments (BOP) statistics, which largely capture Mode 1 and Mode 2, miss a lot of international services activity that happens through local presence. As the global economy shifts toward services, this gap grows more significant. It reflects a deeper transformation: multinational enterprises now often choose to localize operations to serve markets (especially in services where local adaptation or licenses are needed), rather than exporting from the home country. This complicates the interpretation of trade balances and the very notion of "exports" and "imports" in services.

6.1 Data Flows and "Free" Digital Services

Another measurement challenge is the prevalence of services that are *provided free to users* and monetized in indirect ways. Classic examples are search engines, social media platforms, and other internet services which consumers pay $0 for, but which generate tremendous value and are funded by advertising or data collection. When a user in Country A uses a free online service offered by a company in Country B, no monetary transaction occurs to record as an export or import. Yet there is clearly an exchange of value: the user gains a service, the company often gains data (which is then used to improve advertising or AI models, ultimately generating revenue). Traditional trade stats completely overlook this kind of exchange. Some economists have pointed out that GDP and trade measures under-count the digital economy, because many new services improve consumer welfare without equivalent spending (Brynjolfsson et al., 2019). In the context of trade, it means a country like the U.S. might effectively be "exporting" social media services to millions of foreign users and receiving payment in data or through foreign advertisers, but the recorded export might only be the advertising revenue (which is smaller than the total implicit value provided). Data itself is not well-accounted for: large volumes of data cross borders daily (think of billions of Google searches, social media posts, GPS data, etc.), yet data has no tariff classification or dedicated line in trade ledgers. Some researchers have argued data flows should be treated as a new category of international flows, given their importance to business and innovation (Manyika et al., 2016). International organizations have started to explore measuring digital trade – the WTO, OECD, and IMF released a *Handbook on Measuring Digital Trade* in 2020 (OECD-WTO-IMF, 2020), attempting to guide statistical agencies on capturing e-commerce, digital services, and data flows. One finding is that a significant share of trade in goods is now ordered online, and a significant share of services (like media, software, etc.) is delivered online, which calls for new data collection approaches (OECD, 2020).

6.2 Trade in Value-Added and Intangibles

Another measurement evolution is the concept of trade in value-added. Because of global supply chains, gross trade figures can be misleading – a product might cross borders multiple times during production. For example, a semiconductor chip made in Country A, exported to Country B for assembly into a device, and then that device exported to Country C – the value of the chip is counted in trade statistics twice (A to B, and B to C) although it was only produced once. This led to efforts to measure the value-added by each country in the chain (Johnson & Noguera, 2012). When doing so, one finds that services play a larger role than initially apparent, because many services (design, R&D, logistics) are embedded in the value of final goods but not recorded separately in gross trade. The OECD-WTO "Trade in Value-Added" (TiVA) database has shown that, for instance, around half of the value of manufacturing exports from some advanced economies actually comes from services inputs (OECD, 2019). Thus, the rise of GVCs means that the dichotomy of goods vs. services trade is blurring – manufacturing exports often are carriers of services (sometimes dubbed "mode

5 services"). This again reflects a deep transformation: modern economies compete not just on the basis of who can make steel or cars cheapest, but on who can design the best product, manage the most efficient supply chain, and offer the best after-sales support. These are largely service activities entwined with goods production.

The United States' persistent services surplus can be partly understood in this light. The U.S. exports many high-value services and intangibles that may not always be obvious in customs data. For example, Apple Inc. records the sale of an iPhone assembled in China as an import into the U.S. (increasing the goods deficit), but the design and engineering of the iPhone – done in California – is an American value-added that is not counted as a services export. Instead, Apple's profits (or the royalties its Irish subsidiary pays to the U.S. parent for IP use) might show up indirectly in the income account or not at all in trade statistics. This has led economists to note that U.S. trade balances look much better when measured in value-added terms or when accounting for "dark matter" (invisible assets like intellectual property) (Hausmann & Sturzenegger, 2006). Measurement issues like these indicate that our conventional metrics are lagging the new reality of global trade, where intangibles, data, and services play a dominant role.

6.3 Reflecting Deeper Transformations

The difficulty of measuring modern trade is symptomatic of a broader shift: the global economy is becoming ever more interconnected, yet less visibly so. In the past, one could count tons of coal or grain leaving a port to gauge trade. Today, a country's economic influence may spread through subtler channels – a social media platform influencing foreign societies, a search algorithm used by millions worldwide, a dominance in setting technical standards, or control over key data pools. These are not easily quantifiable as "exports" but have real economic value and strategic importance. The platform economy's rise means that international competition and trade policy increasingly revolve around issues like data governance, digital services taxes, and competition policy, rather than just tariffs and quotas. The notion of comparative advantage itself is evolving: it may reside less in natural endowments or even acquired skills, and more in ecosystems of innovation and data. Countries and companies that harness data effectively (the "new oil") can achieve productivity leaps and create services that dominate globally, much as oil-rich nations once wielded outsized influence through energy exports. This has led to talk of a global "digital divide" – not just in internet access, but in the ability to produce and export digital services and to capture value from data.

Another profound change is the role of human capital and creative industries in trade. Services like education and entertainment have become major exports (for example, universities in Australia or the UK earn billions from foreign students – an export of educational services; South Korea's cultural wave (K-pop, film) generates services exports of media content). These sectors defy traditional trade protection measures – you can't put a tariff on a student's knowledge gained or on the popularity of a foreign song – and they require different strategies to develop (investment in quality, reputation, intellectual property protection). For developing

countries, the platform economy offers new opportunities to leapfrog in services (a startup in Nairobi can write software for the world) but also poses challenges if they remain simply consumers of foreign digital services.

7 Conclusion: Continuity and Change in the Evolution of Trade

The history of international trade, from the mercantilist era to the digital age, is a story of both continuity and radical change. Many classical insights remain relevant: the gains from specialization and exchange (Smith, Ricardo) are still realized today when a country like Vietnam grows by joining global value chains, and the cautions about uneven development (List) echo in debates about how least-developed countries can benefit in a data-driven economy. Goods and services are still traded for the same fundamental reason they always were – differences across regions in resources, capabilities, or preferences, and the mutual benefits of exchange. Yet, what is being exchanged and how has expanded beyond the imagination of the early theorists. Where Quesnay saw the wealth of nations in bushels of grain, today's economist might point to terabytes of data; where Ricardo illustrated advantage with wine and cloth, modern examples might use software and financial advice. Services, once a footnote in trade ledgers, now command center stage, and their intangibility has forced a reevaluation of economic metrics and theories.

Crucially, the measurement issues that statisticians grapple with – how to track a download, how to value a free service, how to attribute profits in a multinational cloud service – reflect deeper transformations. They indicate that value creation in the global economy has shifted to ideas, knowledge, brand, user networks, and human capital. These are not as straightforward to quantify or attribute by country as coal and steel were. Our economic frameworks, rooted in a world of farms and factories, are being stretched by a world of microchips and machine learning. International trade theory is evolving in response: researchers are developing models of *trade in digital services*, and international organizations are forging new rules (e.g., negotiations on e-commerce at the WTO, or discussions on a global minimum tax to address profit shifting by digital firms). The platform economy has also raised questions about competition and monopoly that were not present in classical trade theory – when one or two networks dominate globally, the free-trade ideal of many competing producers may not hold, and this has implications for trade policy (e.g., discussions of digital platform regulation might become as important as tariff schedules).

The evolution of international trade has been marked by an ever-widening scope of what is traded – from agricultural goods to manufactured goods to services to data – and by an ongoing refinement of the theories that explain trade's benefits and distributional effects. Classical economists laid the foundation by conceptualizing trade as a source of mutual gain (countering mercantilist zero-sum views) and by analyzing the role of productive specialization. Those ideas have proven remarkably resilient, but they have been augmented by new theories accounting for economies of scale, factor endowments, firm heterogeneity, and network effects.

Historically, trade policy and practice have oscillated between openness and protection, often influenced by these theoretical perspectives and by nations' strategic interests at different stages of development. Today, we see a similar interplay: calls for "digital protectionism" or data localization mirror older debates in a new guise, while proponents of open digital markets echo classical free-traders.

Ultimately, understanding the trajectory from Quesnay's Tableau to Google's algorithms underscores that international trade is not a static concept – it is deeply entwined with the mode of production of each era. As we stand in the "Information Age," services and data flows are the new channels of wealth, requiring us to adapt our analytical tools. The persistent U.S. services surplus and the complications in measuring it are concrete illustrations of how far the world has moved from the simple commodity trade of the past. They remind us that statistics and policies must evolve to capture the reality on the ground (or in the cloud). In appreciating the long arc from classical to contemporary trade, one finds that many principles are continuous – the drive for nations to prosper through exchange, the competitive and collaborative impulses – but the context is continuously transformed by technology and innovation. The narrative of international trade is thus one of both historical continuity and dynamic change, a testament to the ever-progressing nature of the global economy.

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