The changing nature of entrepreneurship over time

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ABSTRACT

Entrepreneurship evolves as nations experience economic growth and development. Not only does the amount of entrepreneurial activity change, but so does the type of entrepreneurship and the relative importance of each. Though historical data on entrepreneurship is limited, new databases have been developed in recent years, helping one to better understand the status of entrepreneurship around the world. World Bank data on new business registrations are available for many countries. A significant increase in new business registrations is evident in many developing economies with slower rates of increase in more advanced economies. Information from the International Labor Organization's Key Indicators of Labor Market*s* indicates that self-employment is more prevalent in less developed economies and experiences significant declines in early stages of development. The most comprehensive database related to entrepreneurial activity around the world is the Global Entrepreneurship Monitor, which contains a variety of data including business ownership rates, motivations underlying entrepreneurship, and public attitudes regarding entrepreneurship. An analysis of the available data shows that entrepreneurship is largely necessity driven in less developed economies, becomes less prevalent in early stages of development before giving way to improvement-driven entrepreneurship as economic development takes hold.

Keywords: entrepreneurship, employment, economic development

The Changing Nature of Entrepreneurship Over Time

People have had to provide for their own needs since the beginning of time. Originally, people took care of all of their own needs and/or the needs of their family by getting their own food, building their own shelter, etc. Eventually, people realized that it made more sense to earn a living through some form of work and to use the earnings to purchase other goods and services that they may need. However, the means by which people earn a living changes as nations develop. Economies tend to begin with large primary sectors. As they progress, secondary and eventually, tertiary sectors develop. As economies move into new stages of development, new businesses and industries need to be formed, requiring entrepreneurial initiative.

The primary sector consists of agriculture, forestry, and fishing. When the development process begins, rapid increases in agricultural productivity eventually means that fewer workers are necessary in that sector, freeing them up for emerging sectors of the economy. The secondary sector includes manufacturing, mining, and construction. Some of these industries require huge startup costs, which enable them to reduce their cost per unit through mass production (spread their start-up cost over a larger amount of goods produced). Though entrepreneurs begin most of these businesses, many tend to benefit from economies of scale, resulting in some industries being dominated by a few large firms (for example, the US in the mid-to-late 1800s (Atack, 1986)). Technological improvement and automation lead to rapid increases in industrial productivity, freeing workers for emerging industries in the tertiary sector. The tertiary sector is composed of services, including information-based industries. Economies with higher incomes tend to have larger service sectors in part due to consumers being able to afford to pay others to perform some services for them. In addition, knowledge-based services come about as the development and implementation of ideas result in high value added

The transformation from a low-income, traditional economy to a modern economy involves significant changes to production methods, a process of change where entrepreneurs provide essential roles, including providing innovative intermediate inputs, permitting specialization, and raising productivity and employment (Gries and Naude, 2010). There seems to be a U-shaped relationship between entrepreneurship and a country's level of economic development, as measured by GDP per capita (Naude, 2010) with higher rates of entrepreneurship for economies dominated with relatively large primary or tertiary sectors but lower rates of entrepreneurship for those with large secondary sectors. The U-shaped relationship implies a higher rate of entrepreneurial activity in low-income countries than in middle-income countries (Wenekers, et. al., 2005). This result may reflect that entrepreneurs in less developed economies are less innovative and tend to be proportionately more 'necessity' motivated (Acs, et. al., 2008; Gollin, 2008). In later stages of development, higher levels of GDP tend to be associated with more 'innovative' forms of entrepreneurship. The role of entrepreneurial ability in the industrial success of the newly industrialized economies of Asia (NIEs) has been emphasized by Nelson and Pack (1999). They assign a key role to the 'effectiveness of entrepreneurship' (or entrepreneurial ability), which they see as a vital determinant of the rate of assimilation of technology as well as its role in taking on uncertainty, given that the adoption of (mostly) foreign technology by entrepreneurs in these countries entails significant risk-taking.

WHAT IS ENTREPRENEURSHIP?

There are two main motivations for entrepreneurship – those who are necessity-driven and those who are improvement-driven. Countries in the early stages of economic development tend to have a large number of people who begin their own businesses (such as street vendors) in order to survive. Improvement-driven entrepreneurs are what most people think about when they discuss entrepreneurship. Schumpeter (1950; 1961) famously defined the entrepreneur as the coordinator of production and agent of change ('creative destruction'). As such the "Schumpeterian" entrepreneur is above else an innovator. Scholars who share this view of entrepreneurship do not consider entrepreneurship to be very important in earlier stages of economic development – they see the contribution of entrepreneurship to be much more important at later stages of development, where economic growth is driven by knowledge and competition. At earlier stages of development, entrepreneurship may play a less pronounced role because growth is largely driven by factor accumulation (Acs and Naude, 2013). Other behavioral definitions allow for a more substantial role for entrepreneurship in developing countries. Kirzner (1973) views the entrepreneur as someone who facilitates adjustment to change by spotting opportunities for profitable arbitrage. This view has resonated among scholars who emphasize the opportunity-grabbing-for-profit nature of entrepreneurship particularly in developing countries (Shane and Venkataraman, 2000).

HISTORICAL DATA ON EMPLOYMENT BY SECTOR

Though historical employment data are limited for most countries, some information going back to 1800 is available for the US and UK and data later in the 1800s are available for other advanced economies, such as France and Germany.

United States

The United States started to collect census data in 1790 and continued for every ten years since. Beginning in 1800[1], questions were asked regarding forms of work, with the questions revised occasionally over time. One form of the survey, used from 1800 to 1830, identified whether workers were free or slave as well as major industries. The primary sector was so dominant such that industries included were agriculture, fishing, mining, cotton textile workers, ocean vessels, teachers and domestics. Though manufacturing was included in the 1810 census, it did not appear again until 1840 (and was included every decade since). Another form of the survey began in 1820 and sought information on "gainful" employment; i.e., those who were consistently compensated for their work. The first time it only asked people if they worked in agriculture, manufacturing or other, while in 1830 it was reduced to agriculture or other before reintroducing manufacturing and adding mining in 1840. In 1850, other sectors were added and it has continued to be refined ever since.

In 1800, about 75% of people earned a living in agriculture, but 21% were not allocated to a particular sector. Estimates that seek to make use of other information to form more precise estimates suggest that up to 90% of people made their living in agriculture. Meanwhile, only 0.1% officially earned a living in manufacturing and 4.5% in services (though both may be a little higher given that 21% were not allocated to a particular sector). Since the focus of this

[1] https://www.census.gov/history/pdf/histstats-colonial-1970.pdf

research is how people earn a living, we'll next focus on the survey of gainful employment; that is, employment that results in consistent compensation for work completed. Agricultural employment made up just over 70% of those gainfully employed in both 1820 and 1830. In 1820, 12% were found to be in the secondary sector while 16% were not classified. Meanwhile, the results of the 1830 survey were limited to whether someone earned a living in agriculture or not (manufacturing and mining were added in the 1840 survey). A little more detail was added from 1850 to 1870 while a more detailed breakdown by sector began to be included in 1880.

Given that context, the chart one (appendix) shows how the way that people earned a living in the United States changed over time, broken down by sector. One can see how agriculture and the primary sector dominated the US economy in its early years as a nation. However, its share of employment gradually declined throughout the 19th century, before falling at a more rapid pace beginning in 1880. It was overtaken by the service sector in 1910 and manufacturing in 1920, eventually declining to under 2% in recent years. Employment in the secondary sector, led by manufacturing, continued to grow in terms of a share of the US economy until the 1950s (with a brief decline during the Great Depression). Over time, the service sector became more dominant, reaching half of employment by World War 2 and 78% of employment in 2010.

United Kingdom

Since Great Britain was ahead of the United States in the development process during the 1700s and 1800s, one would expect agriculture to form a smaller portion of the labor force at that time. Though quality data do not exist for that period, Lindert (1980) estimates that just over 50% of British males made their living through agriculture in the 1750s (compared to between 75% and 90% in the US in 1800). Based in part on British census data, Clark (2002) estimates that this declined to about 37% in 1800. Kjeldsen-Kragh (2007) estimates that about 37% of the labor force was in the primary sector in 1820 while 33% in the secondary sector and 30% in the tertiary sector. Chart two (appendix) shows how employment by sector has changed in Britain over time. By 1841, agriculture was already the smallest sector in terms of employment in the British economy at just over 20%. Manufacturing was the largest and remained so before being overtaken by services in the 1870s (the two continued to have similar shares until World War 1). Though the service sector remained the largest from that point forward, its share didn't accelerate until the 1960s (which also corresponds to a noticeable decline in the manufacturing share), reaching 80% by 2011.

Other Advanced Economies: France and Germany

Kjeldsen-Kragh (2007) provides estimates for sectoral employment for France and Germany from 1870-1992 while French data for 1800 and 2012 are available from Pikkety.[2] Recent German data are available from Destatis[3] (German data prior to 1870 are not available since that's when modern Germany was formed). As can be seen in table 1 (appendix), while agriculture was the largest sector in France for most of the 1800s and early 1900s, its share steadily declined, falling below 50% by 1870. By 1950, it had been overtaken by both services,

[2] https://www.quandl.com/data/PIKETTY/T2_4-Employment-by-Sector-in-France-and-the-United-States-1800-2012
[3] https://www.destatis.de/EN/FactsFigures/Indicators/LongTermSeries/LabourMarket/lrarb013.html

which became the largest sector, and manufacturing, which rose to number two. The trend accelerated for the rest of the twentieth century as the share of employment in the service sector grew and agriculture declined (the secondary sector also declined somewhat). Recent data show that service employment now exceeds three-fourths of total employment while the secondary sector is now down to about 20% and agriculture has fallen to less than 3%.

When Germany was formed in 1871, agriculture was already responsible for less than half of employment. By the start of the First World War, the secondary sector had already overtaken agriculture to be the leading source of employment. It would remain as the largest sector until the early 1970s, when it was surpassed by the service sector. As of 2014, the service sector accounted for nearly three-fourths of all employment while the share in the secondary sector declined to less than one-fourth and agriculture was at 1.5%.

As is evident from all of the above, employment is initially highly concentrated in the agricultural/primary sector before shifting towards manufacturing and then services. Chart 3 confirms the latter move for many other developed countries between 1965 and 2005.

China, India and South Korea

What about developing nations? An economy further along the developmental path is South Korea, which had 63% of employment in agriculture in 1960 (28% in services and 8% in manufacturing – see chart 4 (appendix)). As it experienced rapid economic growth over the next several decades, the share in the primary sector fell below 50% in the 1970s, being exceeded by the service sector, which continued to become more dominant in the twenty-first century. Recent figures put employment in the service sector at 76.4%, with the secondary sector at 17% and primary sector at 6.6%.

Two of the fastest growing economies in recent years are China and India. Estimates indicate that, in 1952, 90% of employment in China was in agriculture while 5% were in the secondary and service sectors, respectively. China began to reform its economy beginning in 1979 under Deng Xiaoping. As economic development took hold in China, agriculture's share of employment diminished, being overtaken by services in 2011 and manufacturing in 2014. The most recent data indicate that services make up just over 40% of overall employment, while about 30% is in the secondary sector and just under 30% are in agriculture.

As of the early 1970s, about three-fourths of total employment in India was in agriculture, slowly declining during the next several decades, reaching 47% in 2012. Meanwhile, both the secondary and tertiary sectors grew in relative size with the service sector reaching 28% and secondary sector reaching 25% by 2012.

As one would expect, a similar evolution of employment has taken place among the developing nations considered as shown by chart five (appendix). Whereas some historical data of employment by major sector are available for advanced economies, limited data exists for developing economies. Table 2 (appendix) lists the sectoral breakdown for select countries for the earliest year available (typically in the 1980s) and latest year (typically 2010 or later). One can see that agriculture plays a much larger role in terms of how people earn a living in these countries. In the 1980s, agriculture had a majority share of employment in almost all of the African countries considered (including a 90% share in Ethiopia), with the exception of Nigeria, where it still had a large share of 37%. Other countries with a majority share in agriculture were China, India and Indonesia. Though the dominance of agriculture diminished during the last several decades, it still had a majority share in Cameroon, Ethiopia, and Kenya, and the largest

share in India and Nigeria. Interestingly, agriculture's share of employment rose in both Nigeria and Turkey. In most cases, the decline in agriculture's share was accompanied by increasing shares for both the secondary and service sector, with the service sector rising by more. The exceptions include Brazil and Mexico, where the secondary sector shrunk and India, which experienced a relatively larger increase in the secondary sector compared to the service sector.

Brief History of Entrepreneurship around the Globe

Whether it is advanced economies such as the United States, Germany, and the United Kingdom, or developing countries such as China and India, it is clear that as economies develop, agricultural employment tends to experience a relative decline and manufacturing and eventually services tend to make up increasing shares of employment. In order for new sectors to emerge, new business startups must arise, led by entrepreneurs. Unfortunately, historical data on entrepreneurship are lacking. According to Baumol and Strom (2010), "Far more than other topics in economics, the study of entrepreneurship must turn to nonstatistical history for the bulk of its evidence." Hull (2009) emphasizes that reliable historical data on employment and ways that people earn a living are lacking, particularly for many developing economies.

Entrepreneurship in China increased following the reforms introduced in 1979 and expanded since. Three different forms of entrepreneurship have taken place including homegrown versions known as "geithu" and "siying giye" and those who were foreign-trained (Liao and Sohmen, 2001). Geithu refers to self-employed street vendors selling products out of necessity. Though most made just enough to meet their limited needs, some succeeded and grew into successful businesses. Siying Giye began in the late 1980s and consisted of those who became entrepreneurs by choice rather than necessity. These entrepreneurs tend to be those with high levels of education, engineers, and former managers of state-owned enterprises, and were involved in a variety of industries. The final category tends to be foreign-educated or foreign-trained Chinese nationals who returned to China and began new businesses, many of which involved the internet. Two of China's most well-known entrepreneurs are *Jack Ma*, who founded the internet commerce company, Alibaba, in Hangzhou, China in 1999 and *Liu Chuanzhi*, who founded Lenovo in his small Beijing office (20 square yards) in 1984.

Regardless of the country or time period, these entrepreneurs had some things in common. Whether it was the introduction of a new product, service, or production method, they noticed opportunities and began new ventures that succeeded in meeting market demand. In many cases, they played a role in enabling economies to shift towards new stages of development.

RECENT DATA ON ENTREPRENEURSHIP BY COUNTRY

In recent decades, various data related to entrepreneurship have starting to be collected. From newly registered firms, to self-employment, to various characteristics of entrepreneurs, each one provides some insight as to the state of entrepreneurial activity across the globe.

New Business Registrations

The World Bank collects data on newly registered firms in the formal economy,[4] however, data availability varies. For some countries, data goes back to 2004 while for some major economies, such as the United States and China, data are not available (see table 3 (appendix)). This provides information as to how many new firms are registering with the government each year, and thus applies to the formal sector of the economy[5]. These firms are domestic firms, typically operating as limited liability corporations (or the equivalent). Notable increases are seen in several countries including Botswana, Ghana, India, Indonesia, Mexico, and Nigeria. As one would expect, more modest increases are seen in more advanced economies including France, Germany, and the United Kingdom. Beginning in 2006, data for Brazil was limited to two of its largest states – Rio and Minas Gerais. Together they experienced a modest increase between 2006 and 2012.

Self-Employment (Key Indicators of the Labor Market)

The International Labor Organization (ILO), as part of their Key Indicators of the Labor Market (KILM),[6] collects data on those who are self-employed and hire others (employers) and those who are self-employed without necessarily hiring others (own account). Given differences in the ability to collect quality data, the time period covered varies between countries. Though data for some countries begin in 1980 and goes through 2013, the availability of data vary significantly between nations. For some advanced economies, like the United States, data are available beginning in 1980 but the latest data are from 2011 while for other countries, data is sparse. For example, data are not available for Mexico or China and the latest data available for Brazil and India are from 2009 (and only one year's worth of data is available for Kenya – 1999). Table 4a shows the earliest and latest available data for select countries. While the US and France had higher proportions of self-employed workers relative to overall employment in the early 1980s, both have experienced modest declines while Germany had a small increase. The United Kingdom, though lagging in the early 1980s, saw a significant increase over the last thirty years, rising to almost 12% in 2013.

Compared to the advanced economies included in table 4a, the ratio of self-employment tends to be much higher in the developing economies under consideration. As described in the background information about the data, "if the proportion of own-account workers (self-employed without hired employees) is sizeable, it may be an indication of a large agricultural sector and low growth in the formal economy (KILM, 2015)."[7] In developing countries, own-account workers tend to be in the informal economy and working at subsistence levels. Given that, economic development is likely to lead to lower rates of own-account workers. Both Indonesia and Turkey had major declines in the ratio of own-account workers while Brazil had a modest decline (India and Mexico had little change). Indonesia experienced a noticeable increase in employers (doubling to 3.5%).

As mentioned in the discussion of developing economies, the African countries under consideration began with high rates of own-account workers due to large informal economies

[4] http://data.worldbank.org/indicator/IC.BUS.NREG
[5] Firms are domestic firms registering as the domestic equivalent of LLCs
[6] http://www.ilo.org/empelm/what/WCMS_114240/lang--en/index.htm
[7] http://kilm.ilo.org/2015/download/kilm03EN.pdf "KILM 3. Status in Employment"

and the prevalence of a large agricultural sector (see table 4c (appendix)). Botswana displayed a dramatic decline in own-account workers from 53.2% in 1984 to 7.2% in 2010 while seeing an increase in employers (from 0.6% to 2.7%).

Global Entrepreneurship Monitor

The most comprehensive dataset related to entrepreneurship is the *Global Entrepreneurship Monitor* (GEM)[8]. A wide range of survey data[9] is available, including but not limited to:

- Established business ownership rate: percent of 18-64 year olds who are currently owner-manager of an established business (been around for at least 42 months)
- Improvement-driven opportunity rate: percent of TEA who claim to be driven by opportunity and who indicate that the main driver of this opportunity is to be independent or to increase their income
- Necessity-driven entrepreneurship rate: percent of those involved in TEA who are involved in entrepreneurship because they think they had no other option
- Total early stage entrepreneurial activity (TEA): percent of 18-64 year olds who are either a nascent entrepreneur or new business owner
- Growth expectation early stage entrepreneurial activity: percent of TEA who expect to hire at least 5 employees in the next 5 years
- Entrepreneurship as career choice: percent of 18-64 year olds who agree with the statement that, in their country, a majority think entrepreneurship is a good career choice
- Perceived capabilities: percent of 18-64 year olds who think they have the capability to start a business
- Perceived opportunities: percent of 18-64 year olds who see good opportunities to start a business in the area where they live

As with the other databases already mentioned, data availability varies between nations with the earliest data starting in 2001 extending to 2014 for many countries. Tables 5a-5c (appendix) reveal the status of different aspects of entrepreneurial activity for select countries. Unfortunately, the latest data available for the UK are from 2005 (the earliest is 2004, so only one year is reported in the table) and thus are presented, but not discussed. The established business ownership rate rose in each country, being the highest in the US and lowest in France. Nearly two-thirds of entrepreneurs are improvement-driven in the US and France, exhibiting little change during the period in the US, but rising substantially in France. It also rose in Germany, but not by that much, reaching just over half in 2014. Relatively few entrepreneurs were necessity-driven, ranging from about 13% in the US to 23% in Germany (it fell somewhat in France and Germany over the last decade). The US stands out in terms of early-stage entrepreneurial activity, well over twice as high as the other countries, rising to 13.8% in 2014 compared to 5.3% in both France and Germany. Growth expectations also tended to be highest in the US at near 40%, but still close to 30% in France and Germany. A higher proportion of

[8] http://www.gemconsortium.org/data/key-indicators

[9] The GEM Adult Population Survey (APS) measures the level and nature of entrepreneurial activity around the world. It is administered to a representative national sample of at least 2000 respondents.

Americans considered entrepreneurship to be a good career choice and also felt confident in their capabilities and noticed opportunities. Add it up and to no one's surprise, the US stands out among the advanced economies considered in terms of entrepreneurial activity.

The established business ownership rate finished the period at the highest rate in Brazil compared to the other developing economies, having risen the most as well. It declined in most other countries, with the exception of Mexico, standing at close to 12% in China and Indonesia but close to 5% in Mexico and Turkey and under 4% in India. Brazil also experienced the largest gain in those who were improvement- driven along with a comparable decline in being necessity-driven. China saw little change in those improvement-driven, but a noticeable decline in those necessity-driven while India saw a slight shift away from improvement-driven towards necessity-driven. Mexico had the highest percentage of early-stage entrepreneurial activity at the end of the period, resulting from the largest gain over the period. Brazil also had an increase as well as a high level of activity while Indonesia and India saw declines over time. By 2014, 85% of Brazilians thought entrepreneurship was a good career choice and a majority thought there were good opportunities in the area in which they live. Though a relatively small portion of Turks was in the early stages of entrepreneurial activity, a majority of those were optimistic about growth prospects.

Data for the African countries considered were limited, but recent. Ghana had the highest rate of established business ownership, but a majority was not improvement-driven. Ethiopia had a relatively small portion of established business owners, but more than two-thirds were improvement-driven. Several of the countries reported high rates of early-stage entrepreneurial activity, led by Nigeria at nearly 40%. All of the nations for which data were available had high rates of those who thought that entrepreneurship is a good career choice, exceeding 80% in Ghana and Nigeria. Both of those countries also displayed evidence of confidence in their entrepreneurial capability (over 85%) as well as perceived opportunities (85% for Nigeria). The survey evidence indicates that people in the African countries considered think that entrepreneurship is a good career choice and a relatively high percentage of people tend to have confidence in their capabilities and perceive more opportunities than those in other regions.

CONCLUSIONS

Entrepreneurs exist at all stages of economic development, but the nature of entrepreneurship changes as nations develop. In early stages of development, necessity-driven entrepreneurship is common as people seek a way to earn a living. As development takes hold, entrepreneurship declines as people obtain jobs and no longer need to work to start a business just to earn a living. In later stages of development, a new motivation for entrepreneurship becomes common – one which involves innovation and improvement. Though historical data are limited for most countries, in recent years, an increasing amount of data have become available to examine the motivation, amount, and nature of entrepreneurship. As one looks at the available data, it is evident that overall entrepreneurship is declining in economies experiencing growth and development as a result of a decline in necessity-driven entrepreneurship. Likewise, improvement-driven entrepreneurship is on the rise in both emerging and advanced economies. A rise in improvement-driven entrepreneurship helps to transform economies, enabling them to move to begin new industries and move to higher stages of development.

REFERENCES

Ács, Z.J., Desai, S. and Hessels, J. (2008). Entrepreneurship, Economic Development and Institutions. Small Business Economics, 31: 219-234.

Ács, Z.J. and Naudé, W.A. (2013). 'Entrepreneurship, Stages of Development, and Industrialization' (in Szirmai, A., Naudé, W.A. and Alcorta, L. eds. Pathways to Industrialization in the 21st Century. Oxford: Oxford University Press. Chapter 14).

Atack, Jeremy (1986). Firm Size and Industrial Structure in the United States during the Nineteenth Century. The Journal of Economic History, 46: 463-475.

Baumol, W. J. and R.J. Strom (2010). "Useful Knowledge" of Entrepreneurship: Some Implications for the History in D.S. Landes, J. Mokyr, and W.J. Baumol, The Invention of Enterprise: Entrepreneurship from Ancient Mesopotamia to Modern Times. Princeton University Press

Clark, George, (2002). The Agricultural Revolution and the Industrial Revolution: England, 1500-1912. Working Paper retrieved from http://www.econ.ucdavis.edu/faculty/gclark/papers/prod2002.pdf

Gollin, D. (2008). Nobody's Business But My Own: Self-Employment and Small Enterprise in Economic Development. Journal of Monetary Economics, 55 (2): 219-233.

Gries, T. and Naudé, W.A. (2010). Entrepreneurship and Structural Economic Transformation. Small Business Economics Journal, 34 (1): 13 – 29.

Hull, K. (2009). Understanding the Relationship between Economic Growth, Employment and Poverty Reduction. Retrieved from http://www.oecd.org/dac/povertyreduction/43280288.pdf

Kirzner, I.M. (1973). Competition and Entrepreneurship. Chicago: University of Chicago Press.

Kjeldsen-Kragh, Soren (2007). The Role of Agriculture in Economic Development: The Lessons of History. Copenhagen Business School Press DK, 2007

Liao, Debbie and Sohmen, Philip (2001). The Development of Modern Entrepreneurship in China. Stanford Journal of East Asian Affairs, Spring 2001, Vol. 1: 27-33.

Lindert, Peter H. (1980). English Occupations, 1670–1811. The Journal of Economic History, Cambridge University Press, vol. 40(04), pages 685-712.

Naudé, W.A. (2010). Entrepreneurship is Not a Binding Constraint on Growth and Development in the Poorest Countries', World Development, 39(1): 33-44.

Nelson, R.R. and Pack, H. (1999). The Asian Miracle and Modern Growth Theory. The Economic Journal, 109(457): 416-36.

Rigoglioso, Marguerite (2011). Africa is the Next Destination for Entrepreneurs. Insights by Stanford Business. Retrieved from http://www.gsb.stanford.edu/insights/africa-next-frontier-entrepreneurs

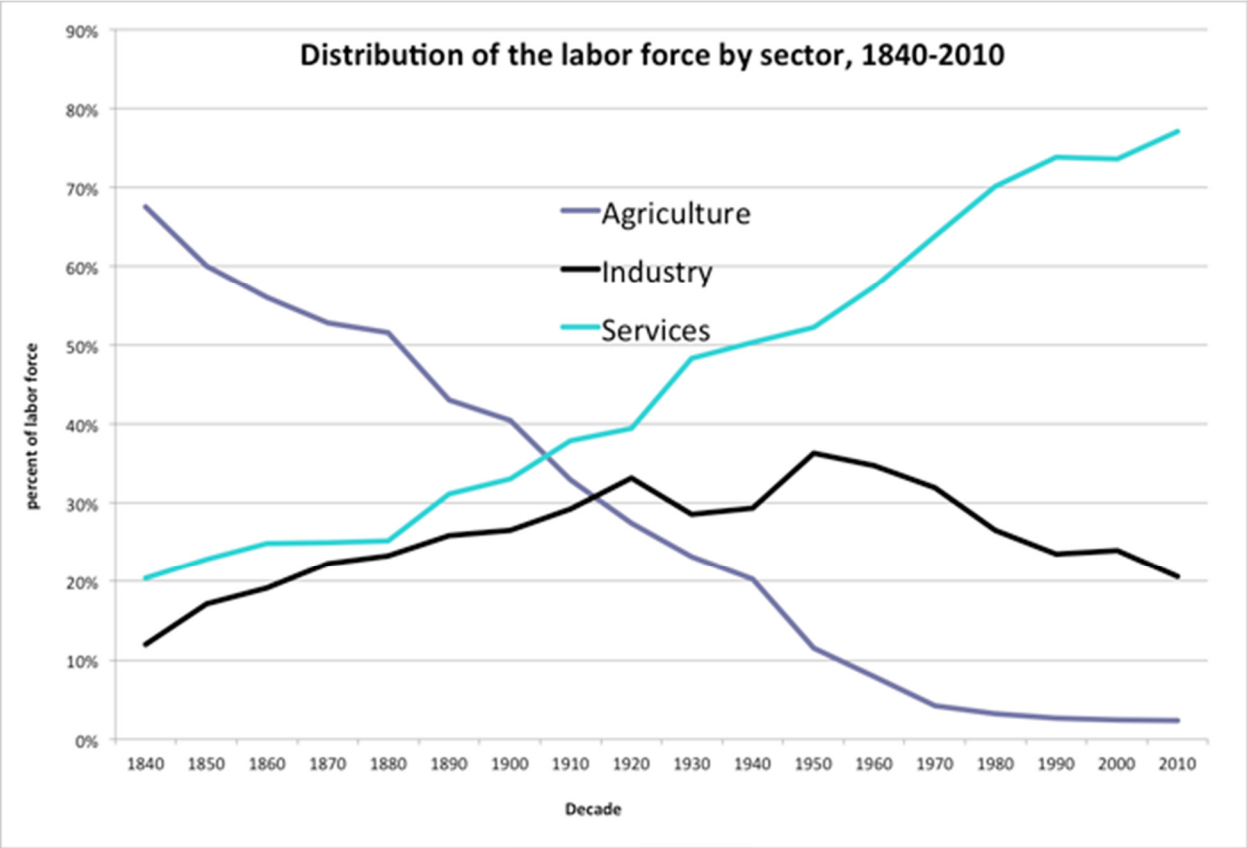
Shane, S. and Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. Academy of Management Review, 25(1): 217-26.

Wennekers, S., Van Stel, A., Thurik, R. and Reynolds, P. (2005). Nascent Entrepreneurship and the Level of Economic Development. Small Business Economics, 24: 293-309.

APPENDIX

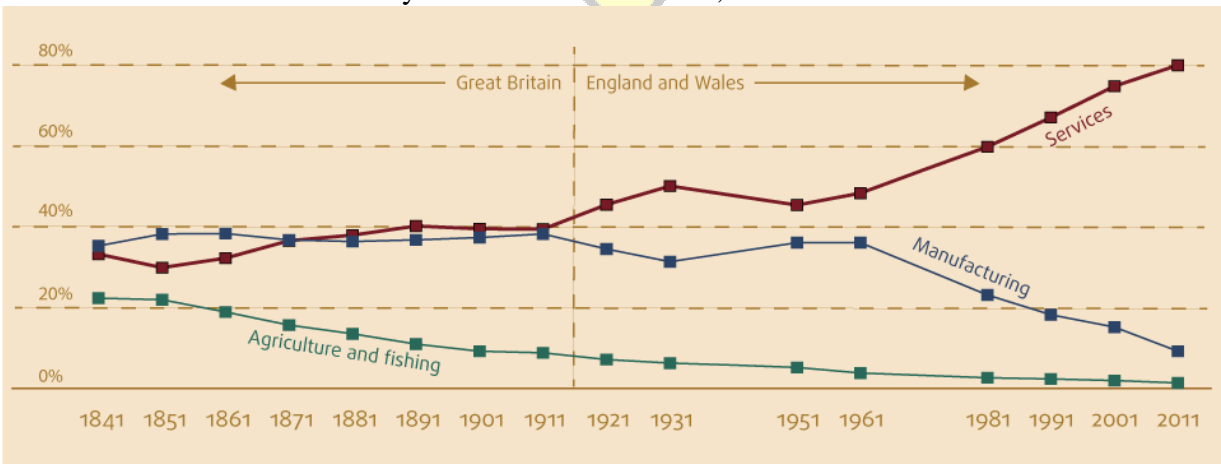
Charts

Chart 1: Changes in US Employment by Sector over Time



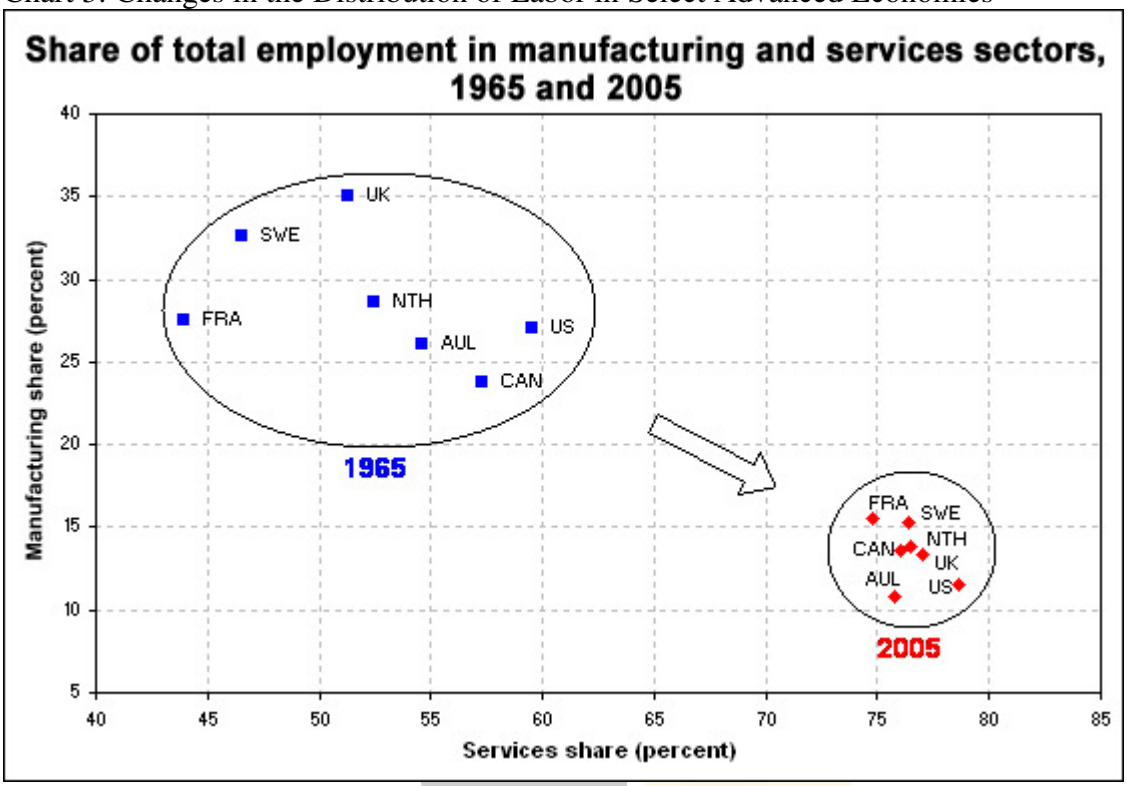
source: http://www.businessinsider.com/dallas-fed-sectoral-employment-charts-2014-10

Chart 2: Distribution of Labor by Sector in Great Britain, 1841-2011



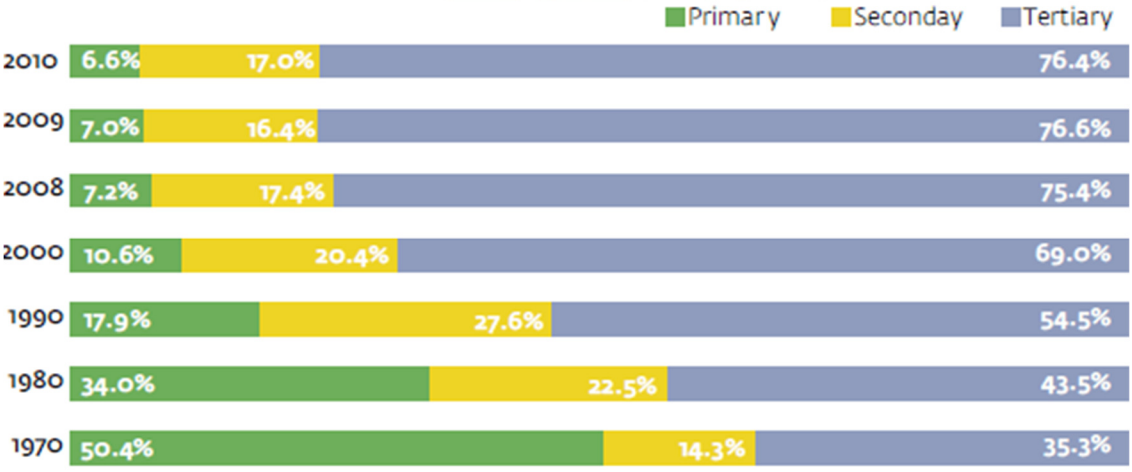
source: http://www.ons.gov.uk/ons/rel/census/2011-census-analysis/170-years-of-industry/sty-170-years-of-labour-market-change.html

Chart 3: Changes in the Distribution of Labor in Select Advanced Economies



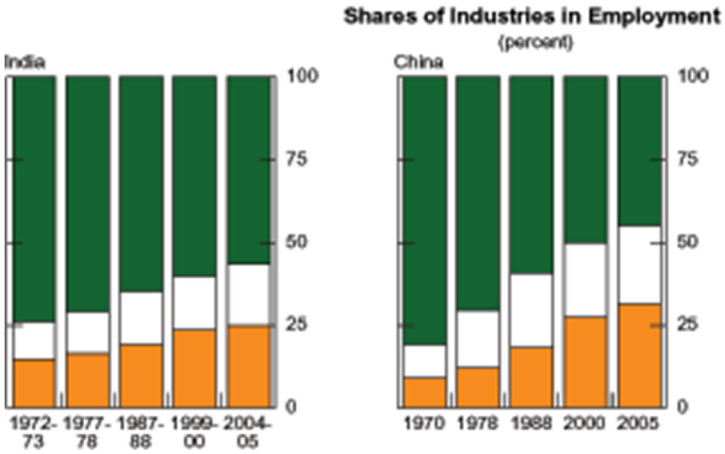
source: http://www.bls.gov/spotlight/2008/around_the_world/

Chart 4: Distribution of Labor by Sector in South Korea



source: Statistics Korea via Korea Tour Information http://koreatourinformation.com/blog/2014/08/01/society/

Chart 5: Distribution of Labor by Sector over Time, India and China



source: http://www.federalreserve.gov/pubs/ifdp/2007/913/ifdp913.htm

Tables

Table 1: Distribution of Labor by Sector over Time

France	Primary	Secondary	Tertiary
1800	64%	21.6%	14.4%
1870	49.2%	27.8%	23%
1913	41.5%	32.3%	22.6%
1950	28.3%	34.9%	36.8%
1992	5.2%	28.1%	66.8%
2012	2.9%	20.9%	76.2%

source**:** https://www.quandl.com/data/PIKETTY/T2_4-Employment-by-Sector-in-France-and-the-United-States-1800-2012

Germany	Primary	Secondary	Tertiary
1870	49.5%	28.7%	21.8%
1913	34.6%	41.1%	24.3%
1950	22.2%	43%	34.8%
1992	3.1%	37.8%	59.1%
2014	1.5%	24.6%	73.9%

source:
https://www.destatis.de/EN/FactsFigures/Indicators/LongTermSeries/LabourMarket/lrarb013.html

Table 2: Share of Employment by Sector for Select Countries (agriculture-industry-services)

	Earliest Year	Latest Year
Botswana (1985, 2006)	58%-11%-31%	30%-15%-55%
Brazil (1981, 2011)	29%-25%-46%	15%-22%-63%
Cameroon (1986, 2010)	79%-7%-14%	53%-13%-34%
China (1980, 2011)	69%-18%-13%	34%-30%-36%
Ethiopia (1994, 2005)	90%-2%-8%	80%-7%-13%
Ghana (1992, 2010)	62%-10%-28%	42%-15%-43%
India (1994, 2012)	60%-16%-24%	47%-25%-28%
Indonesia (1980, 2012)	57%-13%-30%	35%-22%-43%
Mexico (1988, 2011)	24%-27%-49%	14%-24%-62%
Nigeria (1983,2004)	37%-6%-57%	46%-12%-42%
Turkey (1982, 2012)	5%-35%-60%	24%-26%-50%

Source: ILO - KILM

Table 3: Newly Registered Firms by Country

	2004	2012
Botswana	8,990	15,447
Brazil (States of Rio and Minas Gerais; 2006, 2012)	46,456	53,876
Ethiopia (2004, 2009)	754	1,327
France	113,303	121,538
Germany	61,950	69,332
Ghana	5,989	13,154
India	36,859	99,587
Indonesia	20,598	47,549
Mexico	35,081	68,666
Nigeria	23,457	81,144
Turkey	39,984	38,823
United Kingdom	390,200	455,600

Table 4a: Self-Employment Rate Based on KILM: Select Advanced Economies

	Own Account		Employers	
	First Year	Latest Year	First Year	Latest Year
United Kingdom (1983, 2013)	6.2%	11.7%	4%	2.5%
United States (1980, 2011)	8.7%	6.8%	NA	NA
France (1983, 2013)	8.6%	6.5%	4.3%	4.3%
Germany (1983, 2013)	4.2%	6.0%	4.8%	4.7%

Table 4b: Self-Employment Rate Based on KILM: Select Developing Economies

	Own Account		Employers	
	First Year	Latest Year	First Year	Latest Year
Brazil (1990, 2009)	23.2%	20.5%	4.8%	4.5%
India (1994, 2009)	62.4%	63.9%	1.9%	1.1%
Mexico (1980, 2008)	21.7%	22.5%	NA	4.9%
Indonesia (1997, 2012)	44.3%	33.9%	1.7%	3.5%
Turkey (1988, 2013)	29.4%	18.7%	NA	4.6%

Table 4c: Self-Employment Rate Based on KILM: Select African Economies

	Own Account		Employers	
	First Year	Latest Year	First Year	Latest Year
Botswana (1984, 2010)	53.2%	7.2%	0.6%	2.7%
Cameroon (1996, 2010)	65.0%	47.0%	3.5%	3.3%
Ethiopia (1981, 2010)	46.2%	40.9%	1.1%	0.6%
Ghana (2006, 2010)	55.0%	65.3%	4.5%	4.9%

Table 5a: Select Advanced Economies

	United Kingdom	United States		France		Germany	
	2005	2004	2014	2004	2014	2004	2014
Established business ownership rate	5.1%	5.4%	7.0%	1.5%	2.9%	4.3%	5.1%
Improvement-driven	52.0%	*67.0%	66.9%	*40.0%	69.1%	*45.0%	53.7%
Necessity driven	11.0%	13.0%	13.5%	23.0%	16.1%	28.0%	23.2%
TEA	6.2%	11.3%	13.8%	6.0%	5.3%	4.4%	5.3%
Growth expectations	34.0%	25.0%	39.3%	13.0%	30.8%	22.0%	27.4%
Career choice	54.0%	58.0%	64.7%	60.0%	59.0%	54.0%	51.7%
capabilities	51.0%	54.0%	53.3%	33.0%	35.0%	36.0%	36.4%
opportunities	39.0%	34.0%	50.9%	21.0%	28.0%	13.0%	37.6%

*2005

Table 5b: Select Developing Economies

	China		India		Brazil	
	2005	2014	2006	2014	2004	2014
Established business ownership rate	13.2%	11.6%	5.6%	3.7%	10.1%	17.5%
Improvement-driven	43.0%	45.4%	43.0%	36.5%	[a]38.0%	57.8%
Necessity-driven	45.0%	33.2%	28.0%	31.7%	46.0%	29.0%
TEA	13.7%	15.5%	10.1%	6.6%	13.5%	17.2%
Growth expectations	20.0%	24.3%	15.0%	9.8%	15.0%	11.1%
Career choice	74.0%	65.7%	67.0%	57.9%	79.0%	[b]85%
Capabilities	23.0%	33.0%	62.0%	36.7%	56.0%	50.0%
Opportunities	21.0%	31.9%	52.0%	38.9%	44.0%	55.5%

[a]2005, [b]2014

Table 5b: Select Developing Economies (continued)

	Mexico		Turkey		Indonesia	
	2005	2014	2006	2013	2006	2014
Established business ownership rate	1.9%	4.5%	11.4%	5.7%	17.6%	11.9%
Improvement-driven	42.0%	50.0%	23.0%	54.0%	61.0%	38.0%
Necessity-driven	16.0%	22.5%	29.0%	30.0%	14.0%	20.5%
TEA	5.9%	19.0%	6.1%	10.0%	19.3%	14.2%
Growth expectations	15.0%	13.3%	44.0%	59.0%	11.0%	5.9%
Career choice	55.0%	53.2%	77.0%	64.0%	64.0%	72.9%
Capabilities	46.0%	53.5%	55.0%	52.0%	56.0%	60.2%
Opportunities	33.0%	48.9%	34.0%	39.0%	42.0%	45.5%

Table 5c: Select African Economies

	Cameroon		Ghana		Nigeria	
	NA	2014	2010	2013	NA	2013
Established business ownership rate		11.5%	35.5%	25.9%		17.5%
Improvement-driven		40.5%	35.0%	44.0%		52.0%
Necessity-driven		33.5%	37.0%	33.0%		25.0%
TEA		37.4%	34.0%	25.8%		39.9%
Growth expectations		19.6%	16.0%	11.0%		26.0%
Career choice		NA	91.0%	82.0%		81.0%
Capabilities		73.8%	75.0%	86.0%		87.0%
Opportunities		69.3%	76.0%	69.0%		85.0%

Table 5c: Select African Economies (continued)

	Botswana		Ethiopia	
	2012	2014	NA	2012
Established business ownership rate	6.3%	5.0%		10.2%
Improvement-driven	48.0%	54.7%		69.0%
Necessity-driven	33.0%	30.3%		20.0%
TEA	27.7%	32.8%		14.7%
Growth expectations	35.0%	35.9%		17.0%
Career choice	76.0%	69.9%		76.0%
Capabilities	71.0%	67.1%		69.0%
Opportunities	67.0%	57.2%		65.0%