CHAPTER 2

From Pin to PIN

CAPITALISM 1776 AND 2014

From Pin to PIN

What is the first ever thing written about in economics? Gold? Land? Banking? Or international trade?

The answer is the pin.

Not the one that you use for your credit cards. But that little metal thing that most of you do *not* use – that is, unless you have long hair and like to keep it tidy or make your own clothes.

The making of the pin is the subject of the very first chapter of what is commonly (albeit mistakenly)[1] considered to be the first economics book, namely, *An Inquiry into the Nature and Causes of the Wealth of Nations*, by Adam Smith (1723–90).

Smith starts his book by arguing that the ultimate source of increase in wealth lies in the increase in productivity through greater **division of labour**, which refers to the division of production processes into smaller, specialized parts. He argued that this increases productivity in three ways. First, by repeating the same one or two tasks, workers become good at what they do more quickly ('practice makes perfect'). Second, by specializing, workers do not have to spend time moving – physically and mentally – between different tasks (reduction in 'transition costs'). Last, but not least, a finer breakdown of the process makes each step easier to be automated and thus be performed at superhuman speed (mechanization).

And to illustrate this point, Smith discusses how ten people dividing up the production process of making a pin and specializing in one or two of the sub-processes can produce 48,000 pins (or 4,800 pins per person) a day. Compare this to the at most 20 pins each of them can produce a day, Smith pointed out, if each individual worker performed the whole process alone.

Smith called the pin manufacture a 'trifling' example and later went on to note how more complicated the divisions of labour for other products are, but there is no denying that he lived in a time when ten people working together to make a pin was still considered cool – well, at least cool enough to front someone's would-be *magnum opus* in what then was a cutting-edge subject.

The next two and a half centuries have seen dramatic developments in technology, driven by mechanization and the use of chemical processes, not least in the pin industry. Two generations after Smith, the output per worker had nearly doubled. Following Smith's example, Charles Babbage, the nineteenth-century mathematician who is known as the conceptual father of the computer, studied pin factories in 1832.* He found that they were producing about 8,000 pins per worker a day. 150 more years of technological progress increased productivity by yet another 100 times, to 800,000 pins per worker per day, according to the 1980 study by the late Clifford Pratten, a Cambridge economist.[2]

The increase in the productivity of making the same thing, such as the pin, is only one part of the story. Today, we produce so many things that people living in Smith's time could only dream about, such as the flying machine, or could not even imagine, such as the microchip, the computer, the fibre-optic cable and numerous other technologies that we need in order to use our pin – sorry, PIN.

All Change: How the Actors and the Institutions of Capitalism Have Changed

It is not only production technologies – or how things are made – that have changed between Adam Smith's time and ours. **Economic actors** – or those who engage in economic activities – and **economic institutions** – or the rules regarding how production and other economic activities are organized – have also gone through fundamental transformations.

The British economy in Smith's time, which he called the 'commercial society', shared some fundamental similarities with those that we find in most of today's economies. Otherwise his work would be irrelevant. Unlike most other economies of the time (the other exceptions being the Netherlands, Belgium and parts of Italy), it was already 'capitalist'.

So what is the capitalist economy, or **capitalism**? It is an economy in which production is organized in pursuit of profit, rather than for own consumption (as in **subsistence farming**, where you grow your own food) or for political obligations (as in feudal societies or in socialist economies, where political authorities, respectively aristocrats and the central planning authority, tell you what to produce).

Profit is the difference between what you earn by selling something in the market (this is known as the sales revenue, or simply **revenue**) and the **costs** of all the inputs that have gone into the production of it. In the case of the pin factory, its profit would be the difference between the revenue from selling the pins and the costs that it has incurred in making them – the steel wire that has been turned into pins, the wages for its workers, the rent for the factory building and so on.

Capitalism is organized by capitalists, or those who own **capital goods**. Capital goods are also known as the **means of production** and refer to durable inputs into the production process (for example, machines, but not, say, raw materials). In everyday usage, we also use the term 'capital' for the money invested in a business venture.*

Capitalists own the means of production either directly or, more commonly these days, indirectly by owning **shares** (or **stocks**) in a company – that is, proportional claims on the total value of the company – that own those means of production. Capitalists hire other people on a commercial basis to operate these means of production. These people are known as **wage labourers**, or simply workers. Capitalists make profits by producing things and selling them to other people through the **market**, which is where goods and services are bought and sold. Smith believed that **competition** among sellers in the market will ensure that profit-seeking producers will produce at the lowest possible costs, thereby benefiting everyone.

However, the similarities between Smith's capitalism and today's capitalism do not stretch much beyond those basic aspects. There are huge differences between the two eras in terms of how these essential characteristics – private ownership of means of production, profit-seeking, wage employment and market exchange – are actually translated into realities.

Capitalists are different

In Adam Smith's day, most factories (and farms) were owned and run by single individual capitalists or by partnerships made up of a small number of individuals who knew and understood each other. These capitalists were usually personally involved in production – often physically on the factory floor, ordering their workers about, swearing at them and even beating them up.

Today, most factories are owned and operated by 'unnatural' persons, namely, corporations. These corporations are 'persons' only in the legal sense. They are in turn owned by a multitude of individuals, who buy shares in them and part-own them. But being a shareholder does not make you a capitalist in the classical sense. Owning 300 of Volkswagen's 300 million shares does not entitle you to fly to its factory in, say, Wolfsburg, Germany and order 'your' workers about in 'your' factory for one-millionth of their working time. Ownership of the enterprise and control of its operations are largely separated in the largest enterprises.

Today's owners in most large corporations have only **limited liabilities**. In a limited liability company (LLC) or a public limited company (PLC), if something goes wrong with the company, shareholders only lose the money invested in their shares and that is that. In Smith's time, most company owners had unlimited liabilities, which meant that when the business failed, they had to sell their own personal assets to pay back the debts, failing which they ended up in a debtors' prison.* Smith was against the principle of limited liability. He argued that those who manage limited liability companies without owning them are playing with 'other people's money' (his phrase, and the title of a famous play and then 1991 movie, starring Danny DeVito) and thus won't be as vigilant in their management as those who have to risk everything they have.

Companies are organized very differently from in Smith's days too, whatever the ownership form. In Smith's day, most companies were small with one production site under a simple command structure made up of a few foremen and ordinary workers, and perhaps a 'caretaker' (which is what the hired manager was called then). Today, many companies are huge, often employing tens of thousands of workers or even millions of them all over the world. Walmart employs 2.1 million people, while McDonald's, including franchises,† employs around 1.8 million people. They have complicated internal structures, variously made up of divisions, profit centres, semi-autonomous units and what not, hiring people with complicated job specifications and pay grades within a complex, bureaucratic command structure.

Workers are different too

In Smith's time, most people did *not* work for capitalists as wage labourers. The majority of people still worked in agriculture even in Western Europe, where capitalism was then most advanced.[3] A small minority of them worked as wage labourers for agricultural capitalists, but most of them were either small subsistence farmers or **tenants** (those who rent land and pay a proportion of their output in return) of aristocratic **landlords**.

During this era, even many of those who worked for capitalists were not wage labourers. There were still slaves around. Like tractors or traction animals, slaves were means of production owned by capitalists, especially the plantation owners in the American South, the Caribbean, Brazil and elsewhere. It was two generations after the publication of *The Wealth of Nations* (henceforth *TWON*) that slavery was abolished in Britain (1833). It was nearly a century after *TWON* and after a bloody civil war that slavery was abolished in the US (1862). Brazil abolished it only in 1888.

While a large proportion of people who worked for capitalists were not wage labourers, many wage labourers were people who wouldn't be allowed to become wage labourers today. They were children. Few thought that there was anything wrong with hiring children. In his 1724 book *A Tour Through the Whole Island of Great Britain*, Daniel Defoe, the author of *Robinson Crusoe*, expressed his delight at the fact that in Norwich, then a centre for cotton textiles, 'the very children after 4 or 5 years of age could everyone earn their own bread', thanks to the 1700 ban on the import of calicoes, the then prized Indian cotton textile.[4] Child labour subsequently became restricted and then banned, but that was generations after Adam Smith's death in 1790.

Today, in Britain and other rich countries, the picture is completely different.[*] Children are not allowed to work, except for limited hours for a limited range of things, such as paper rounds. There are no legal slaves. Of the adult workers, around 10 per cent are **self-employed** – that is, they work for themselves – 15–25 per cent work for the government, and the rest are wage labourers working for capitalists.[5]

Markets have changed

In Smith's time, markets were largely local or at most national in scope, except in key commodities that were traded internationally (e.g., sugar, slaves or spices) or a limited range of manufactured goods (e.g., silk, cotton and woollen clothes). These markets were served by numerous small-scale firms, resulting in the state that economists these days call **perfect competition**, in which no single seller can influence the price. For people from Smith's time, it would have been impossible even to imagine companies hiring over twice the then size of London's population (0.8 million in 1800) operating in territories that outnumber the then British colonial territories (around twenty) by a factor of six (McDonald's operates in over 120 countries).[6]

Today, most markets are populated, and often manipulated, by large companies. Some of them are the only supplier (**monopoly**) or, more typically, one of the few suppliers (**oligopoly**) – not just at the national level but increasingly at the global level. For example, Boeing and Airbus supply close to 90 per cent of world civilian aircrafts. Companies may also be the sole buyer (**monopsony**) or one of the few buyers (**oligopsony**).

Unlike the small companies in Adam Smith's world, monopolistic or oligopolistic firms can influence market outcomes – they have what economists call **market power**. A monopolistic firm may deliberately restrict its output to raise its prices to the point that its profit is maximized (I explain the technical points in Chapter 11 – feel free to ignore them now). Oligopolistic firms cannot manipulate their markets as much as a monopolistic firm can, but they may deliberately collude to maximize their profits by not under-cutting each other's prices – this is known as a **cartel**. As a result, most countries now have a **competition law** (sometimes called an **anti-trust law**) in order to counter such **anti-competitive behaviours** – breaking up monopolies (for example, the US government broke up AT&T, the telephone company, in 1984) and banning collusion among oligopolistic firms.

Monopsonistic and oligopsonistic firms were considered to be theoretical curiosities even a few decades ago. Today, some of them are even more important than monopolistic and oligopolistic firms in shaping our economy. Exercising their powers as one of the few buyers of certain products, sometimes on a global scale, companies like Walmart, Amazon, Tesco and Carrefour exercise great – sometimes even defining – influence on what gets produced where, who gets how big a slice of profit and what consumers buy.

Money – the financial system – has also changed[7]

We now take it for granted that countries have only one bank that issues its notes (and coins) – that is, the **central bank**, such as the US Federal Reserve Board or the Bank of Japan. In Europe in Adam Smith's day, most banks (and even some big merchants) issued their own notes.

These notes (or bills, if you are in the US) were not notes in the modern sense. Each note was issued to a particular person, had a unique value and was signed by the cashier issuing it.[8] It was only in 1759 that the Bank of England started issuing fixed-denomination notes (the £10 note in this case – the £5 note came only in 1793, three years after Adam Smith died). And it wasn't until two generations after Smith (in 1853) that fully printed notes, with no name of the payee and no signature by issuing cashiers, were issued. But even these fixed-denomination notes were not notes in the modern sense, as their values were explicitly linked to precious metals like gold or silver that the issuing bank possessed. This is known as the **Gold** (or Silver or other) **Standard**.

The Gold (Silver) Standard is a monetary system in which the paper money issued by the central bank is freely exchangeable with a specified weight of gold (or silver). This did not mean that the central bank had to have in reserve an amount of gold equal to the value of the currency that it had issued; however, the **convertibility** of paper money into gold made it necessary for it to hold a very large gold reserve – for example, the US Federal Reserve Board kept gold equivalent to 40 per cent of the value of currency it issued. The result was that the central bank had little discretion in deciding how much paper money it could issue. The Gold Standard was first adopted by Britain in 1717 – by Isaac Newton,* the then head of the Royal Mint – and adopted by the other European countries in the 1870s. This system played a very important role in the evolution of capitalism in the next two generations, but that is a subject for later: see Chapter 3.

Use of banknotes is one thing, but saving with and borrowing from banks – namely, **banking** – is another. This was even less developed. Only a small minority had access to banking. Three-quarters of the French population did not have access to banks until the 1860s – nearly a century after *TWON*. Even in Britain, whose banking industry was far more developed than that of France, banking was highly fragmented, with the interest rates being different in different parts of the country well into the twentieth century.

Stock markets, where company shares (stocks) are bought and sold, had been in existence for a couple of centuries or so by Smith's time. But, given that few companies issued shares (as mentioned above, there was only a small number of limited liability companies), the stock market remained a sideshow to the unfolding capitalist drama. Worse, many people considered stock markets to be little more than gambling dens (some would say they still are). Stock market regulation was minimal and hardly enforced; stockbrokers were not obliged to reveal much information about the companies whose shares they were selling.

Other financial markets were even more primitive. The market for **government bonds**, that is, IOUs that can be transferred to anyone, issued by a government borrowing money (the very market that is at the centre of the Euro crisis that has shaken the world since 2009), existed only in a few countries, such as Britain, France and the Netherlands. The market for

corporate bonds (IOUs issued by companies) was not very developed even in Britain.

Today, we have a highly developed – some would say over-developed – financial industry. This is made up of not just the banking sector, the stock market and bond markets, but increasingly the markets for financial derivatives (futures, options, swaps) and the alphabet soup of composite financial products like MBS, CDO and CDS (don't worry, I will explain what all these are in Chapter 8). The system is ultimately backed by the central bank, which acts as the **lender of last resort** and lends without limits during financial crises, when no one else wants to lend. Indeed, the absence of a central bank made the management of financial panic very difficult back in Smith's time.

Unlike in Smith's time, today there are a lot of rules on what actors in the financial market can do – how many multiples of their equity capital they can lend, what kind of information about themselves companies selling shares need to reveal, what kinds of assets different financial institutions are allowed to hold (e.g., pension funds are not allowed to hold risky assets). Despite this, the multiplicity and complexity of financial markets have made their regulation difficult – as we have learned since the 2008 global financial crisis.

Concluding Remarks: Real-world Changes and Economic Theories

As these contrasts show, capitalism has undergone enormous changes in the last two and a half centuries. While some of Smith's basic principles remain valid, they do so only at very general levels.

For example, competition among profit-seeking firms may still be the key driving force of capitalism, as in Smith's scheme. But it is not between small, anonymous firms which, accepting consumer tastes, fight it out by increasing the efficiency in the use of given technology. Today, competition is among huge multinational companies, with the ability not only to influence prices but to redefine technologies in a short span of time (think about the battle between Apple and Samsung) and to manipulate consumer tastes through brand-image building and advertising.

However great an economic theory may be, it is specific to its time and space. To apply it fruitfully, therefore, we require a good knowledge of the technological and institutional forces that characterize the particular markets, industries and countries that we are trying to analyse with the help of the theory. This is why, if we are to understand different economic theories in their right contexts, we need to know how capitalism has evolved. This is the task we turn to in the next chapter.

Further Reading

H.-J. CHANG

Kicking Away the Ladder: Development Strategy in Historical Perspective (London: Anthem, 2002).

R. HEILBRONER AND W. MILBERG

The Making of Economic Society, 13th edition (Boston: Pearson, 2012).

G. THERBORN

The World: A Beginner's Guide (Cambridge: Polity, 2011).

Notes

PROLOGUE: WHY BOTHER?: WHY DO YOU NEED TO LEARN ECONOMICS?

1. These are the first sentences of his article ‘The macroeconomist as scientist and engineer’, *Journal of Economic Perspectives*, vol. 20, no. 4 (2006).
2. For a similar view, see the article, ‘Is economics a science?’ by Robert Shiller, one of the 2013 Nobel Economics laureates. The article can be downloaded at: http://www.theguardian.com/business/economics-blog/2013/nov/06/is-economics-a-science-robert-shiller.

CHAPTER 1: LIFE, THE UNIVERSE AND EVERYTHING: WHAT IS ECONOMICS?

1. R. Lucas, ‘Macroeconomic priorities’, *American Economic Review*, vol. 93, no. 1 (2003). This was his presidential address to the American Economic Association.
2. This is brilliantly explained by Felix Martin in his book *Money: The Unauthorised Biography* (London: The Bodley Head, 2013).
3. Many of these services also involve consumption of material things as well – for example, the food in a restaurant – but we are also purchasing the cooking and the serving services.

CHAPTER 2: FROM PIN TO PIN: CAPITALISM 1776 AND 2014

1. Before Smith, there were other economists, like the economic thinkers of Renaissance Italy, the Physiocrats of France, and the ‘mercantilists’, some of whom I discuss in Chapter 4.
2. Clifford Pratten, ‘The manufacture of pins’, *Journal of Economic Literature*, vol. 18 (March 1980), p. 94. Pratten says that the figure was for the more efficient of the two manufacturers then in existence. The less efficient one produced around 480,000 pins per worker per day.
3. Even in the most industrialized countries, like Britain and the Netherlands, over 40 per cent of people worked in agriculture. In the other Western European countries, the ratio was over 50 per cent and in some countries up to 80 per cent.
4. D. Defoe, *A Tour Through the Whole Island of Great Britain* (Harmondsworth: Penguin, 1978), p. 86.
5. Depending on the country, 60–80 per cent of those who work for capitalists work for **small and medium-sized enterprises** (SMEs), employing less than a few hundred people. SMEs are