

02 Adam Smith and Classical Economics

Economics began officially in 1776 with one of the most influential books in history, "The Wealth of Nations", by Adam Smith, a Scot. Smith had predecessors but he publicly established the key ideas of economics. In the 1800s, Karl Marx called the thinkers of Smith's era "Classical" economists, and the name stuck.

Economics has advanced since Smith, so it might seem not worthwhile to study ideas that emerged 200 years ago. Yet Classical economists developed nearly all the ideas of modern economics, ideas that still determine policy today; and Classical ideas are easier than modern ideas. So we can start with it and move to modern subtleties later.

02 Classical Economics; Synopsis. Classical economics began with Adam Smith in Scotland about the same time as the American Revolution in 1776. Smith pioneered the idea of a system that regulates itself. Smith saw the idea first for a capitalist economy, and then others extended the idea to other systems such as a forest.

The capitalist system depends on people and business firms competitively pursuing self-interest. People pursue satisfaction, happiness, or "utility"; business firms pursue profit. In pursuing self-interest, people and business firms automatically lead the system to provide most of what people want in about the quantities they want. People get TV sets, milk, and education, about as much as they want, just like the forest gets about as many oaks and elms as it needs.

People and firms do not have to disdain the public interest. They can serve it if they wish. They just serve the public interest about as well by pursuing their own interests. Oak trees also serve the interests of the forest when they pursue sunshine, sometimes to the detriment of other trees; and deer serve the interests of the forest when they eat apples. Oaks and deer would not help the forest more if somehow they tried to help the forest directly.

Competition drives the system to provide the most, of the best, for the least, to as many as possible. If deer did not compete for apples, apples would not spread through the forest. If coyotes did not compete for rabbits, there would be too many rabbits. Bucks compete for does. Competition makes oaks, deer, coyotes, and the forest, all healthier and stronger. In the same way, people compete to see who can be the best baker and so bakers make good quality bread at low prices for many people. Competition is not often mean and cut throat, and it often involves cooperation. Deer run in herds; workers develop software in teams.

Apple trees collect sunlight and nutrients so as to produce a large crop of ripe apples. Apple trees collect nutrients from the rest of the forest which they later return as apples. In the same way, business firms collect capital to make their products. Often firms have to borrow money (nutrients or capital) to invest. Banks collect money in the form of savings from workers and from people who make more than they need. Banks loan that money to business firms. When the economy operates correctly, the amount of money that workers and rich people put into

banks as savings equals the amount that business firms borrow to invest to make products. Savings equals investment. The financial system is part of the overall balance of the whole economy.

After a large severe fire, the forest begins again. From a few trees and animals, the forest grows automatically to its proper size, and then stops by itself. Ideally a capitalist economy does the same. However, it is hard to tell the natural size of a capitalist economy, and people are often not satisfied with the natural size. People think of happiness in terms of more stuff. So people invent schemes to promote growth. Schemes for growth usually interfere with the balance of savings and investment. Often they cause more problems than they solve. Schemes for growth usually favor some groups over others.

There are other reasons to promote growth, and they get mixed up with the desire for more. The system does not work equally well for everybody. Some people even get left out despite their best honest efforts. People mistakenly think that more stuff will cure these problems. People promote growth in an effort to get more stuff so that they can direct the more stuff to the people who got left out.

Historical Highlights. A bit of history helps. More detail on these ideas will be introduced throughout the book where needed.

Agrarian Roots. Capitalism began after 1200, in Europe, in agricultural society, with peasants and landholding lords. European society was built around distinct stable socio-economic classes. Aristocratic landlords dominated politics and the military. Society was based on close ties between politics, the church, landlords, and the military. Religion justified the order. Capitalists were only a minority in numbers and power until the middle 1800s. This traditional agrarian order is the society that the original Conservatives in the 1700s and early 1800s wished to preserve, but not the society that modern Conservatives wish to preserve.

Mercantilists. Smith used a strong contrast to promote his vision of the free market. Smith portrayed the economic and political experts that preceded him as “bad guys” who constantly advocated interfering in the free market. History came to call these bad guys “Mercantilists”. They arose about the time of Shakespeare in the 1500s, and prevailed well into the 1800s. They have waxed and waned but really they have never gone away.

Mercantilists were the self-proclaimed experts of their time, the “beltway bandits” of their time. They had solutions to every economic problem; schemes to lead the country to greatness and to vanquish all foes. They advised the king to reward political clients by giving clients economic privileges.

Mercantilists are still here. Mercantilists would be happy on many talk radio shows, in particular Right Wing shows. Modern mercantilists say: we have to sell more to all countries than they sell to us; protect industries; aid farmers; protect against foreign labor; protect all American jobs; levy tariffs and erect trade barriers; carry out planned investment projects such as huge sports arena; have the state insure houses even in dangerous areas; give money to the rich so the rich

have enough to invest; use the rich to create jobs; force economic growth; impose a sales tax; impose a value added tax (VAT); keep a strong military; and pass laws to help clients such as ethnic groups, manufacturers, and the Religious Right.

Imposing order is a natural attitude. This attitude is hard to root out by logic alone. In “Star Wars”, the Sith uses this mindset to get people to voluntarily help him reorder the galaxy. He creates problems, and then he offers centralized order as the solution. In “Lord of the Rings”, Boromir tries to take the Ring from Frodo because the power to order makes intuitive sense to Boromir. On a lighter note, this attitude got Lucy into trouble on “I Love Lucy” through her schemes. Mercantilism is still one of the most severe economic foes even now.

Classical Economics. Classical economists favored a completely free market, domestically and internationally. The market worked best when left alone, and any attempts to improve it inevitably hurt it. They opposed Mercantilism and all interference, including aid to business. Like the Jedi of “Star Wars”, in contrast to the Sith, they argued for self-determination and for giving up interference. They dominated economic thought from Smith’s time until about 1880 but it is not clear how much they actually influenced policy.

Role Reversal. In the middle 1800s, the rising capitalist class began to dominate society. It took over from the landlords as commanders at the top of a hierarchy. The rising capitalist class took control of politicians, the military, and the church. Before it gained control, the capitalist class had argued for changes in society, a free market, the state to stay out of affairs, and separation of church and state. After taking control, the capitalist class reversed its position. It argued for conserving social relations, and for state interference in the market. It used religion and the state to promote its interests. For example, the rising capitalist class used the state to build railroad networks in Europe and the United States. As with original Conservatives, the new dominant business class wished to preserve a hierarchical society; but it wished a different hierarchy. This era spawned modern Right Wing political parties such as the Republican Party of the United States.

Neoclassical Economics. This is modern economics, what textbooks teach now. It is called “neoclassical” because it stayed within the same framework as Classical economics but refined Classical ideas. It developed in the 1880s but did not prevail until about 1900. Despite setbacks and variants, it is still the dominant paradigm in economics now.

Neoclassical economics used the idea of diminishing returns to provide a solid logical foundation for understanding consumer choice, the strategies of business firms, the interaction of consumer strategies and business strategies, the balance of the economy, the static ideal, and the dynamic ideal.

The Great Depression and J.M. Keynes. The Great Depression was the worst economic depression in history, lasting from 1929 until 1941 in the United States. In several of those years, unemployment persisted over 25%, the worst case of “getting stuck” in economic history. The Depression made clear that the real economy did not always operate according to the ideals, and could fall seriously short of what people needed.

The Great Depression stimulated alternative models to the ideals given in the previous chapter, with the alternatives framed in ways that allowed the state to intervene to help as needed. John Maynard Keynes provided the logical basis for alternatives. Keynes showed how government action might be able to un-stick an economy. Most governments say that they follow Keynes at least to some extent, although I do not believe that is actually the case. Keynes was to theory in the 1900s what Smith was to the idea of the free market.

Austrians and Libertarians. Neoclassical economics was founded by schools that began independently in Austria, France, and England. In contrast to the other two schools, ideas peculiar to the Austrian school did not become popular until the Conservative movement of the 1950s. The Austrians have intellectual influence but they have little influence on actual policy. They stress the dynamic ideal over the static ideal: the economy always does best in the long run if we just leave it alone, even if it has to endure short-term problems such as unfair competition and poverty. They say that all problems, even the Great Depression, result primarily from state intervention and from unavoidable state incompetence. They strongly champion the free market. They oppose even popular intrusions such as Social Security. In strong versions, they wish to privatize all state functions including the police. Libertarians are a political party that tries to put into practice ideas of strong personal freedom. They use Austrian economics as a way to justify their politics.

Prosperity and Programs. The world recovered both from World War II and the Great Depression beginning in the late 1940s. Because the rest of the world was devastated by the Depression and the War, America was effectively the only real economic power in the world from after the War until the middle 1960s. Thus the 1950s and 1960s brought the greatest era of prosperity in America ever seen, unrivalled until recent years.

Most people gave some credit for the prosperity to the ideas of Keynes and to the economic programs built on those ideas. Austrians and opponents of Keynes dispute this claim. They say that the prosperity came because of the peace and because of the free world market, and came despite the programs not because of the programs.

Building on the prosperity, Americans wished to correct long-standing economic and social problems, such as unemployment, poverty, and racism. They began the social programs of the 1960s and 1970s, such as the public housing projects that still stain the landscape, food stamps, and the Job Corps. Some of these programs did much good, such as "Head Start" for pre-school children, and school lunches. Some of these programs did no good or caused much harm, such as easy welfare.

"Reality Check" of the 1970s. Americans mistakenly believed that dominating the world economically was normal for America. They believed that affluence was normal. Then several shocks in the 1970s slapped them awake. The Germans and Japanese rose as strong economic powers. Other nations such as France had recovered their ability to produce, and did not depend on America. American quality had grown comparatively inferior, and America produced some out-and-out shoddy goods such as cars. The costs of the Vietnam War began to cause inflation.

Social programs began to cause inflation. The Organization of Petroleum Exporting Countries (OPEC) increased the price of oil drastically and limited supplies of oil. All these factors combined to produce stagnation, inflation, and unemployment, which, until then, were not supposed to be able to exist at the same time. To be out of work and to face 25% per year inflation was not tolerable.

Conservative Rise. As with the Great Depression, the hard times of the 1970s led to ideas and movements that were supposed to save the day, but in the opposite way to Keynes. The hard times led to: "Supply Side" economics that gives privileges to business firms as a way to stimulate the economy; the victory of modern Conservatism; the myth of reducing government while at the same time expanding government; the rise of the Religious Right; and the alliance between the Religious Right, the Republican Party, business leaders, and secure working people. That complex still exerts much power in 2012. Hard times helped create modern mercantilism, and so brought us back to what Adam Smith had argued against.

Why "Wealth of Nations". Smith's book is not a justification for wealth, power, and privilege in general. Smith wrote just as small-scale industrial capitalism was developing, before factories had become large and before concentrated modern big business had developed. There were no corporations with insulated executives. Instead, there were many small firms, and the owners of a firm often worked along with the hands. Large aristocratic landowners and their politicians still dominated Smith's society. Much as some fundamentalists fear our world, landlords feared that industrial capitalism and free trade would undermine the social order, morality, religion, and the power of England. Smith had to show that industrial capitalism and free trade would add to the wealth and power of England, and would create a better social order and moral order. That was why he called his book "The Wealth of Nations".

Smith showed that free trade, free enterprise, solid property rights, and no interference, together allow for self-regulation of the economy and lead toward the ideals that I described in the first chapter. He showed that free individual action leads to benevolent spontaneous unplanned persistent order, and that this order satisfied the moral and political needs of English people. He showed that this order leads to greater wealth and power than the previous agricultural order, which was not spontaneous and free.

Smith set the standard. Since then, in advocating policy, social analysts try to show that the policy leads to an order that is spontaneous, benevolent, persists, has the greatest welfare, has the greatest wealth, and self-regulates.

The Invisible Hand. In a famous image, Smith called the self-regulation of the economy an "Invisible Hand". It is best to quote several passages from the "Wealth of Nations". These are the only extended quotes in this book. The spelling is his.

P. 14: Give me that which I want, and you shall have this which you want, is the meaning of every such offer; and it is in this manner that we obtain from one another the far greater part of those good offices which we stand in need of. It is not from the

benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages. Nobody but a beggar chuses to depend chiefly upon the benevolence of his fellow-citizens. Even a beggar does not depend upon it entirely.

P. 423: As every individual, therefore, endeavours as much as he can both to employ his capital in the support of domestic industry, and so to direct that industry that its produce may be of the greatest value; every individual necessarily labours to render the annual revenue of society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good. It is an affectation, indeed, not very common among merchants, and very few words need be employed in dissuading them from it.

P. 13: This division of labour, from which so many advantages are derived, is not originally the effect of any human wisdom, which foresees and intends that general opulence to which it gives occasion. It is the necessary, though very slow and gradual, consequence of a certain propensity in human nature which has in view no such extensive utility; the propensity to truck, barter, and exchange one thing for another.

Whether this propensity be one of those original principles in human nature, of which no further account can be give; or whether, as seems more probable, it be the necessary consequence of the faculties of reason and speech, it belongs not to our present subject to enquire. It is common to all men, and to be found in no other race of animals, which seem to know neither this nor any other species of contacts.

End Quotes.

Bicycles. An example gets the ideas across better than a long explanation.

“Demand” is the total amount what all consumers wish of a certain good at a certain price. Consumers “demand” 4 million washing machines per year at a price of \$500 per machine.

“Supply” is the total amount of what producers will provide of a good at a certain price. Manufacturers will supply 4 million washing machines per year at a price of \$500 per machine.

A market “clears”, is healthy, and is in balance (partial equilibrium) when the supply at a price just matches the demand at some price. In this case, the market clears at a price of \$500.

Consumer demand, and provider supply, depend on each other to make the economy work. We cannot understand the economy by looking at one alone. We have to look at their relation.

Until about the middle of the 1970s, bicycles were either what people call “clunky” or were really sophisticated. Clunky bikes were one speed with internal brakes, or three speeds with internal brakes, internal gears, and baskets. Sophisticated bikes were racing bikes as in the Tour de France.

Then two innovations in consumer taste radically changed the bike market: (1) “banana” seat bikes, low to the ground, with multiple external gears, and highly maneuverable; and (2) “mountain” bikes with many external gears, external brakes, and tires with thick treads. Any bike maker that did not hop on the bandwagons suffered bad sales. Raleigh and Schwinn used to excel at making the old style bikes, yet nearly got wiped out until they produced the new style bikes. Bike companies that did foresee the changes made a lot of money and came to dominate the market for a while.

The bike market did not change because of a state order or an arbitrary decision by bicycle makers. Hobbyists originally developed both banana seat bikes and mountain bikes. Then the bikes caught on informally among people, and their popularity spurred bike makers to bring out slicker versions. Bikes in general were not better before the change or after the change. The change is not about “better” in some abstract sense. There is only what people want. It is better because that is what people want, and because that gives people more satisfaction. Business firms respond to the taste (demand) of consumers. If this relation leads to a more effective economy or to a better world in some abstract sense, as it often does, then good; but there is no guarantee.

Smith understood the relation between consumers and business firms, but he emphasized business firms. This one-sided emphasis led to problems that we still face, as we will see in later chapters.

Technical Change: Getting Better. When the market responds to changes in taste, people feel better, but the sum total of material wealth does not necessarily go up – nor should it. Having mountain bikes instead of Raleigh 3-speeds might have made people more satisfied but it did not increase the total of material wealth.

Innovations in technology such as electricity and innovations in organization such as the Internet do increase the total of wealth, especially material wealth. They give us genuinely new goods and they allow us to do more with the resources that we have. This is what most people think of when they think how capitalism makes life better.

The implementing of technical innovations and of innovations in organization is the only way that the economy really grows. The implementing of innovations is natural economic growth. Keep in mind this idea of natural growth because it will recur throughout the book, especially in contrast to the forced expansion of state programs.

The process of implementing innovations is the same as with a change in taste, but it is worth going through the process to be sure that we understand.

Almost any modern technological invention will do. Music compact discs have a cleaner sound than vinyl, last longer, are easier to carry around, and their playing equipment is easier to carry around (try carrying a turntable to the beach as with the classic old Dual turntables). Even used compact discs sound much better than the average used vinyl record. Compared to what records would cost if compact discs had not been invented, compact discs are cheaper than vinyl, so we get all the benefits at no greater cost. Compact discs allow for cheap good quality Classical music, classical jazz, and classical blues, in a way that vinyl never could. When the technology behind music compact discs later moved to cd-roms for computers, and then was used to create DVDs, the improvements transferred over into unforeseen areas of life. Compact discs really do make life better. As I re-wrote in 2012, portable digital technology, such as jump drives, MP3, MP4, and Wave players, was doing to compact discs what they had done to vinyl, for much the same reasons.

Phillips and Sony developed compact discs not out of any mission to make the world a better place but to make a profit. Phillips has made a lot of profit through licensing. Sony will make a lot of profit through Blu(e) Ray, the upgrade of compact disc technology. Music and movie firms did not adopt the technology out of the goodness of their hearts - they did it to make a profit. Firms that quickly adopted music compact discs made a lot of profit. Firms that lagged behind lost money. As time went by, all firms adopted the new technology one way or another, and profit evened out between various firms. No state agency had to order firms to adopt compact disc technology or had to order the public to buy compact discs. Firms using technology to seek profit best served the consumer and led to a better world.

Aspects of Self-Regulation; the Invisible Hand.

Flow of Capital. The economy self-regulates by moving resources from one kind of good to another kind of good, from one-speed bikes with baskets to 12-speed mountain bikes with no baskets. Resources are part of capital, so the economy self-regulates by moving capital from one kind of enterprise to another kind of enterprise. This is how most business people think about the Invisible Hand of self-regulation. They say that capital “flows” between ventures.

Seeking Profit. Business firms shift capital (resources) in search of the greatest profit. Bike companies began making mountain bikes because that style sold the most and got the greatest profit. Bike companies stopped making clunky one-speeds and three-speeds because those styles did not make as much profit. Business people also understand the Invisible Hand and self-regulation in terms of seeking profit.

Revenue is not the same as profit. A business firm can have a high volume of sales but no profit at all as when a farmer sells 500 acres worth of wheat at a loss, or a low volume of sales but a high profit as when a car dealer sells a single Hummer. The key figure is percentage of profit in relation to the cost of the original capital. If a Ford Taurus sells for \$20,000 and brings the dealer \$2000 profit, then the dealer makes about 10% profit. If a dealer sells a Ferrari for \$80,000 but makes only \$4000 in profit, then the dealer makes only about 5% profit even though \$4000 is twice \$2000. Business people try to get the greatest percentage “return on invested

capital” that they can.

When business firms seek the greatest return on invested capital, and there are no significant flaws in the economy, then the search for profit leads to the greatest welfare for consumers. The search for profit can be a source of much good. What matters are the market conditions under which firms seek profit. Economists study those market conditions so as to advise politicians on how to make the market work best.

Competition. Business firms compete in the search for profit. Competitors such as Huffy almost drove Schwinn and Raleigh out of business. If firms did not compete, they would not be forced to use resources effectively and to shift their capital to the use that gave the greatest satisfaction to consumers.

One particular kind of competition is important to self-regulation: price war.

At first, the makers of mountain bikes could use the high demand for that kind of bike to charge a price well above costs. They made a high return on their capital. When other companies saw the gains, they made mountain bikes too. To get a share of the market, the new firms undercut the price offered by the original firms. In cutting price this way, the second wave of bike makers got all the customers and the former makers got none. So the former makers had to cut their price as well, or they made no profit at all. A price war ensued until profit went down to a low normal rate.

Price war keeps the rate of profit in line between business firms, and drives the rate of profit down to as near cost as possible.

Opportunity Cost. Another way to look at the flow of capital and the effects of competition is through the idea of “opportunity cost”. If a firm did not switch from making one-speed bikes to making mountain bikes, then it would make less profit than it could, even if it still made some profit from selling clunky bikes. The difference between the profit the firm could have made from mountain bikes and the profit it did make from clunky bikes is like a cost. Business people feel this cost acutely when they realize that they could have made 10% on a new nature park but made only 7% on a shopping mall instead. Private people feel this cost when they could have invested in a stock that did well but instead invested in a stock that did only average. Business firms try to minimize the cost of lost opportunities by always investing their capital to get as great a return as possible. “Opportunity cost” is a term from neoclassical economics. Classical economists did not have a separate term for opportunity cost but they clearly understood the idea and used it in their explanations.

Allocation of Resources. When capital can flow freely in search of the greatest profit, and nothing interferes with competitive price war, then business firms use resources most effectively in making all the products that consumers want, not just bicycles. Self-regulation leads to efficient allocation of resources between all the kinds of goods that consumers want, and thus to the most efficient production of all the kinds of goods that consumers want. Self-regulation leads to the most productive and efficient economy practically possible.

Now there are many styles of “mountain” bikes, including bikes for girls and bikes for boys, and bikes for people of various ages. Makers have to allocate steel, rubber, plastic, paint, and other resources in the right proportion between the bikes for girls and the bikes for boys, and between big bikes and little bikes, meaning in the proportion that consumers want. If makers do not allocate in this way, they “suffer an opportunity cost” and do not make as much profit as they could have made. When they do allocate this way, they use resources to make bikes in just the proportion that people want.

The same is true of the steel, plastic, and paint used not just for bikes but also for tricycles, wagons, scooters, motorcycles, cars, pickup trucks, large trucks, trains, planes, and fire engines. Business firms allocate resources between all those uses according to how much profit they hope to make from those various goods. How much profit business firms hope to make depends on how much consumers as a whole want each of those various goods in comparison to all the others, and are willing to pay for each of those various goods in comparison to all the others.

Land allocation is a good way to think about the automatic best allocation of resources. A single farmer has 100,000 acres of land, enough land to supply all the food for a nearby town. The farmer would not plant all the land in one crop. He/she allocates the land in various crops according to what the people in the town want. The farmer gauges what the people want by what they are willing to pay for a crop. If the people as a whole want more carrots than tomatoes, they pay more, and the farmer plants more land in carrots than tomatoes. In the end, the land is allocated among the various crops so that the use of the land brings the greatest satisfaction to the consumers in the town.

The same thing would happen if there were many farmers each with only 100 acres of land, and if each planted his/her land in one crop. Farmers that saw tomatoes doing better than carrots this year would switch to tomatoes. In the end, the land would be allocated between crops so that it served the needs of all the people just as well as if one farmer allocated the land.

When business firms allocate all resources between all goods in this way, the economy uses resources most efficiently, at full capacity, to make just what consumers want. The economy makes as much as can be made of what consumers want out of the available resources. The economy is at full capacity given the natural limitations of scarce resources.

Prices. Prices supply the information that business firms use to decide where to send capital and resources. Prices result from the operation of the economy, and then tell the economy how to keep operating. A high price tells a business firm that consumers want more of a good, and so the business firm makes more of the good until the profit rate falls and the price falls. A low price tells business firms that consumers want less of a good, and so business firms make less until the price rises. A high price for a resource, such as steel, means that the firm uses less of the resource. A low price for a resource means that the firm uses more of the resource. Eventually the price of the final good, such as bikes, and the price of the resources that are used to make the final good, come into line, as we will see in the chapters Four and Five.

Interfering. Anything that interferes with competition or with prices thwarts self-regulation (the Invisible Hand), results in less efficient use of resources, and results in less-than-full capacity.

Anything that interferes in the free market has these bad results even though it seems like a good idea at the time, such as giving help to farmers. We have to be sure that we interfere only to cure a problem; that the cure does not make for worse problems; and that the cure, even when useful in this one particular case, does not set bad examples for other interference. Smith castigated all interference in the free market, and wished to eliminate all barriers to production and trade.

Restless Striving. The media sometimes makes fun of business people when business people seek not just some profit but seek their greatest profit they can. It is a little odd, and can seem greedy, to give up 5% profit on this venture if a firm can make 7% profit at some other venture. It seems odd, and can seem greedy, to give up 5% profit on a bookstore to make 7% profit on a coffee shop for yuppies (see "You've Got Mail"). It seems a bit compulsive and intense.

We should not judge business people, or weekend stock investors, or local mechanics, as greedy or weird when they forego a little profit here to make a greater profit somewhere else. We do not judge ourselves odd when we look for cheaper laundry soap and we do not judge a mechanic odd when he/she looks for cheaper safe brake linings. To look for the best deal is not always weird or compulsive. It often makes good sense. It can indicate an adventurous personality. It also is a powerful force driving toward the most efficient use of resources, to greatest capacity, giving consumers what they want, and adoption of the new and the better.

When it takes too much time and effort to seek greater profit in another venture, then business firms should forego the greater profit to just take what they can from the present venture with lesser profit. Astute sane business people do in fact act this way.

Bigger Adjustments. Adjusting to a change in taste for bicycles is not a very big self-regulation. The Invisible Hand does pretty well even with larger problems but it tends to get weaker the larger the arena is. The flaws of capitalism make it harder for the Invisible Hand to adjust in major arenas such as global warming or the spread of nuclear technology.

The flow of capital in seeking profit is the most powerful force for the adoption of innovations, but it is not necessarily the force that thinks up innovation. Bio-tech did not arise out of business firms seeking profit but arose out of researchers seeking truth. Yet business firms seeking profit will be the agents that guide how bio-tech is developed and used. To the extent that innovations make us better off, then capital flow in seeking profit makes us better off too.

Self-regulation helps us to deal with changes such as a hard winter or a small war. It can help us deal with hurricanes such as Katrina, the depletion of oil, or big wars such as Vietnam. But because those large changes disrupt the price system, and can lead to imperfect competition, self-regulation does not always handle them smoothly.

The real question is not "does self-regulation handle everything without a hitch?" The real question is "does self-regulation handle problems better than could the state?" Could private enterprise have handled Hurricane Katrina better than did state and federal governments? This is a big question that cannot be settled here. People argue well on both sides, including the

idea that there would have been a much smaller problem to begin with if the government had not misled residents by building levees. If private people had not built in bad places to begin with, the hurricane would have caused much less of a problem, one that private enterprise might have been able to handle.

Keep in mind what the Invisible Hand does not do. It does not guarantee that there are no flaws at all. It does not guarantee that the economy is necessarily fair. Hardworking poor people still cannot afford bikes for all their children. The economy need not lead to a more equal distribution of income and wealth. Successful bike firms pay their workers well but that does not mean the workers make as much as the owners. The world does not necessarily get better because of economic self-regulation. I think the world was better off with Raleigh three-speed bikes but I have no idea how to bring them back. Most people do not really take their "mountain" bike into the mountains, and real mountain bikes are not very good in the city, but it is now hard to get a good city bike. I have to make do with hybrids that imitate the "cool" of mountain bikes but do not give the performance of a real street bike. The world is better off with nuclear power but not in all respects. We do not want a free market in enriched uranium. The world is better off with many electronic gadgets but not in all respects. I dislike cell phones except for long drives in empty country. Capitalism certainly helped to cause global climate change, and it cannot do anything to undo the bad effects. In the next few decades, we will see if the world is better off with a market in bottle-reared, genetically engineered, artificial babies.

The world definitely has gotten better through capitalism. We should not think of hampering capitalism just because self-regulation does not lead to some dreamy future world or just because it cannot solve all problems. To hamper it for these reasons would undermine the benefits. Yet we also should not expect it to do what it cannot. We have to recognize what capitalism cannot do, and then we have to find the best alternative way of doing that.

Productivity. Adam Smith had to explain why factories create more wealth than farms or small workshops. He said that factories were more productive, for two reasons: the division of labor and the habits of the owners.

Smith's second most famous image after the Invisible Hand is of a pin factory. Smith visited a small factory that made straight pins, where he was amazed by a simple lesson. The making of a straight pin was divided into about a hundred distinct tasks. By dividing up and specializing, the factory could make thousands of pins a day where an old-fashioned shop, where each person made a complete pin from start to finish, could have made only a few dozen pins a day. This is the birth of modern manufacture. The idea of the division of labor eventually allowed Americans to mass manufacture guns and so to move in on a market they have dominated since. Traditional landlords could not, or would not, adopt this division of labor, and so their farms were doomed to be less productive than emerging factories. Restrictions on trade and business often amount to restrictions on the division of labor, and thus on productivity.

Smith was correct that factories are productive but he was only partly correct about the division of labor as the source of productivity. A clever division of labor does increase productivity but it cannot be the major source of the increase in productivity of capitalism. People have been clever

about dividing up tasks and about helping each other for a long time. Every peasant household has a practical division of labor between men and women, young and old, gardeners and people who plough, and between people who tend the cattle and people who tend the fields. Smith saw that increased productivity was somehow tied into new ways of thinking about the volume of production and with the new machines of his time but he did not know how a machine could lead to more efficient production. He was misled by then-current ideas about labor and machines. In our day, we can explain how scientific production methods, including both new machines and new divisions of labor, lead to more efficient production. Classical economists never completely figured out these questions, and the lack plagued them until the rise of neoclassical economics.

Even though Smith could not fully work out the source of productivity in the new factories, still, just pointing out the role of productivity, seeing one source in the division of labor, and looking for an explanation in styles of organization, were important steps forward.

In Smith's time, landlords liked to hold lavish parties while workers liked to drink strong ale. No better illustrations exist than the novel "Tom Jones" or the novels of Jane Austen and the Bronte sisters. Neither landlord nor workers usually had much money left over to invest in factories so as to create more wealth for the future. Factory owners, on the other hand, loved to save out of their profits and loved to reinvest savings. The more profit the factory owners made, the more they would invest, and the more wealth the nation would have in the future. The more wealth was directed into the hands of factory owners by making sure that they made profit, the more wealth the country would have in the future. Wealth made more wealth by using frugal capitalists as an intermediary tool. All restrictions on the free market reduced the amount of capitalist profits, reduced the amount of their investment, and so reduced future wealth. Taxes on profits reduced investment and so reduced future wealth. These were strong arguments for free trade and for not taxing the new factories any more than anybody else, or for taxing them even less than other people. This is a theory of growth based on the personality of capitalists. Capitalists act as the midwives for wealth to give birth to more wealth.

To this day, Conservatives argue that we should reduce taxes on the wealthy so that the wealthy save more, so that more money is available for investment, so that more investment will lead to greater growth and greater wealth. They still argue that wealth makes more wealth by using rich people as its intermediary tools. I do not know if rich people know of Smith's logic. I think they do not know Smith well but have learned to use the general drift of his argument without knowing the source and without caring if it is true. It seems to justify what they want.

Smith's argument for supporting capitalist profits was true in Smith's time but it is no longer true in our time. These days, capitalists can find all that they need for investment without any special treatment from the state. Also, having additional money available does not necessarily mean the money will be invested, will be invested fully, will be invested wisely, or will be invested in ways that lead to productivity and growth. The Classical version of these assumptions is called "Say's Law"; see below. The modern version sometimes is called "supply side" economics; we will see it in a later chapter.

Smith's argument for the free market in general is still true.

To get a sense of how the argument for supporting capitalist profits might have worked in Smith's time, and how it might still make some sense, we need to look at money, savings, investment, and the rate of interest as Classical economists did.

Balance of Total Supply and Total Demand. This section and the next few sections together explain Classical ideas of growth, savings, investment, and the rate of interest. These ideas tie into ideas about capacity, total supply, and total demand. The terms used in these sections really belong to neoclassical economics. I use the terms for convenience and because they are not deceptive here. The ideas that the terms represent fit accurately with Classical ideas, and it is too confusing to introduce one set of terms here and then shift to another set later.

Smith's argument about the need for profits to produce savings is really about growth. It explains how the economy might grow. It has an important truth at its core but it is misleading because it implies that growth can occur indefinitely as long as people save, and it implies that the best way to save is through rich people. Before getting directly into relations between savings, investment, and the rate of interest, we have to look at an economy in balance between demand and supply. This takes us into questions of circularity, closure, and self-reproduction.

Suppose the landowners and the workers were like the capitalist factory owners and that they saved everything that they did not need just to get by. Then who would buy all the goods that the factories make? Savings would pile up in the bank, and goods would pile up in factories and stores. Factories would have all the capital they need to make lots of stuff waiting for them in the banks, but nobody would buy the stuff. The factories would have to scale back. In scaling back, the factory would not use the savings and so the savings would lie idle. The factories would not employ any workers, and so the workers would not have any salary out of which to buy goods or to save. People have to buy, and cannot only save, for the economy to work.

On the other hand, suppose instead that factory owners were like landowners and workers, and did not save anything. Nobody saved. Everybody spent all his/her money on goods for right now. No matter how much anybody made, he/she spent it all. In that case, capitalists would focus their efforts on current production so as to meet the demand for goods right now. Two problems arise:

(1) As people want more goods, factories expand production. As factories expand production, they hire more people. As they hire more people, workers have more salaries with which to buy the additional products, so they want more products. And so on. This circle seems to continue indefinitely.

This sounds great. In fact, it sounds so good that it has served as the basis for severe mistakes about capitalism all through the history of economics: "Say's Law" and "supply side".

Can it really happen? Of course it cannot. As we will see in later chapters, diminishing returns set in. People get tired of working so hard to buy more goods. Factories become inefficient. It becomes more expensive to produce the same additional quantity of goods. Factories have to pay people more and more. People actually get tired of having more goods.

If we think of the economy expanding this way a few percent, we do not really think about the problems inherent in unlimited expansion against diminishing returns. To force home the idea of problems with expansion, think of the economy expanding not 15% but 100% (doubling), or expanding 10 times or 100 times.

(2) Who would replace the capital in the factories as it wore out so that the factories could keep on making the goods that everybody wanted? Where would the capitalists get any money to implement an invention so that the economy could progress? In the static ideal, capital is replaced automatically as part of the selling price of all goods. In the real world, capitalists have to borrow money to invest so as to replace capital and so as to expand sometimes. If nobody saved, where would the money come from for investment for replacement and for investment for expansion?

Before going on, we need four definitions. The ideas were around during Classical times but could not be precisely defined until neoclassical times. We will use them here, and then I will define them more precisely in later chapters. The terms here differ slightly from the standard terms in neoclassical economics.

(A) All the goods that all the business firms offer make up the “total supply” of the economy. Total supply includes all the material goods made by factories and all the services and experiences offered too.

(B) All the goods that all the consumer-workers wish to buy make up the “total demand” of the economy.

(C) All the goods that are offered by all business firms, and all the salaries paid to all workers, are together the “capacity” of the economy, the size of the economy.

(D) Full capacity comes when there is full employment, and when all the plants of all the business firms (all the factories, offices, and storefronts) are putting out as many goods as they can without straining the facilities enough to increase costs above the price of goods.

The economy can run at less than full capacity for a long time, as in a prolonged recession, but that condition produces hardships that we will meet in later chapters. The economy can run at more than full capacity for short times but that condition strains the economy and increases costs, so the economy cannot run at more than full capacity for too long.

The answer to the dilemma about savings and investment comes when two conditions coincide. This resolution is what the next few sections explain.

(1) There is at least one capacity of the economy in which total demand equals total supply. This condition is one definition of general equilibrium. There is one capacity in which the total supply of all goods equals the total demand of all goods. There is one capacity in which the price at which the capitalists can sell goods just covers the salaries that the consumer-workers have to receive in order to be able to buy all the goods. There is one size of the economy in which the circular economy is closed and self-reproduces.

(2) This one capacity is full capacity.

It is possible that there is more than one size at which this happens. The quick answer, which I do not demonstrate here, is that ordinarily there is only one good size at which this happens, and this one size is full capacity. In recessions, the economy can “get stuck” at less than full capacity when total demand equals total supply at less than full capacity, but we do not have to consider that until later chapters. It is tempting to think we can continually increase the size at which total demand equals total supply, so that we can continually increase the size of full capacity. This is the mistake noted above.

The only way to safely increase the full capacity at which total demand equals total supply is through implementing innovation in the free market. Implementing innovation is “natural growth”, so the only way to increase full capacity is through natural growth. I make this point again often in later chapters.

Interlude: The Ideal Simple Model. Before going on to consider the effects of money, interest, savings, and investment, we need to look at replacement in an ideal economy, especially one without any of those features. Consumers buy new cars not just to say in style but primarily because the old one wears out. Business firms regularly have to buy new supplies and materials too. Firms have to hire new workers as current workers get promoted, retire, quit, or die. Firms have to train the new workers that they hire. Firms have to keep some liquid reserves (cash or near cash) on hand to buffer against risks and other problems, and in case the firm wants to take advantage of an innovation. These liquid reserves are part of the normal operating capital of a business firm.

In an ideal economy, business firms do not have to borrow to get any of the resources they need for replacement, risk, or opportunities. Business firms save some of the revenue they get from selling goods normally, to use for these purposes. All business firms have to do this, so no firm gains any advantage from not doing this, and from using all revenues for production right now. If any firm did not save at the proper amount, then it would go out of business, leaving only firms that did save at the proper amount. It is not even appropriate to call the revenues earmarked for replacement, risk management, and opportunity “savings”. They are part of normal operating capital. Of course, in a real economy, this is not the case, and all business firms have to borrow from time to time.

Balance of Savings and Investment. Nearly all Classical economists lived in the real world and thought about real world problems. They might have known of an idealized economy but they did not use it for reference much in their work. So we have to think of the balance of the whole economy in terms of what real firms need, and that includes money to borrow. Business firms get money for investment from banks. Banks get money to loan out from deposits. Deposits come mostly from the incomes of private people, the consumers and workers of the economy. The workers get the money to deposit from part of the salary that they get paid for working in the business firms. The banks serve as intermediaries between business firms and consumer-workers, using money as the “stuff” (currency) of mediation.

Now we begin to tie the two conditions above to the third condition of savings, investment, and

the rate of interest. Briefly, if (1) savings equals investment, then (2) total supply equals total demand, at (3) full capacity, and it all comes together. Ordinarily this can happen at only one size of the economy.

Money, Savings, Investment, and Interest. Savings in banks cannot just lie idle. They are part of a closed and circular system. They have to be loaned out at interest. Somehow savings has to equal investment after we take account of the rate of interest. Savings has to equal investment at a particular rate of interest. Classical ideas about how savings might equal investment, taking into account interest, are simple.

The starting point is neutral money. Assume that money is not useful itself but is useful only for buying other things. It is only a neutral medium of exchange.

Banks set the rate of interest so as to keep savings as nearly equal to investment as they can. Banks perform this service not out of public spirit but, as with other business firms, in their own self-interest. This is how:

(A) Business firms need money and come to banks looking for it. Suppose that the banks do not have enough on hand right now in savings, so they raise the rate of interest both on loans that they give to business firms and on savings. The higher rate on loans reduces some demand for loans while the higher rate on savings leads people to bring more savings to the bank. People consume less but save more. The bank has more money to give to business firms. At some rate of interest, the amount of money that the banks take in as savings just balances the amount that they give out as loans.

(B) Suppose on the other hand that the banks have more savings than they can loan out. Banks reduce the rate of interest that they charge for loans and that they pay out on savings. The reduced rate on loans causes business firms to ask for more loans while the reduced rate on savings causes people to save less. People spend more and save less. The bank has less money to give to business firms. At some rate of interest, the amount of money that the banks take in as savings just balances the amount that they give out as loans.

The banks constantly adjust the rate of interest to maintain this balance. If the banks do not adjust the rate of interest this way, they do poorly. If they have too little money to loan out, they miss some profit from the missed loans – they suffer an opportunity cost. If they have too much savings, they have to pay interest on money that they do not use. Competition drives banks to act as stewards of the interest rate to make sure that savings equals investment.

Total Supply and Total Demand Again. Now we return to total supply, total demand, and capacity. In the following stories, do not worry about the exact details or even if the stories are completely correct. Try to see that there is a connection between interest, savings, investment, total production, total demand, and capacity.

(A) This case is similar to what happens when the economy “comes down” after the boom phase of the business cycle. Do not worry about investment and savings at first. Suppose business firms make more goods than people wish to buy. Total supply is greater than total demand, or total demand is less than total supply. Instead of buying, people put their salaries into savings. When firms see that they cannot

sell all the goods that they make, the firms decrease production, and decrease their demand for loans for investment. The bank has to reduce the rate of interest for loans. When the bank reduces the rate of interest for loans, and with a lot of money coming in as savings, the bank finds that it has a surplus of savings over loans, so it reduces the rate for savings as well. The reduced rate for savings causes people to save less and to spend more at the same time that business firms reduce production. Total demand rises to meet a falling total supply. Eventually, people can buy all the total production, and firms make only just as much as the people demand in total. Total demand equals total supply. At that balanced level of total supply and total demand, the rate of interest again leads savings to equal investment.

(B) This case is like the recovery after the bust phase of a business cycle. Suppose business firms make fewer goods than people wish to buy. Total supply is less than total demand, or total demand is greater than total supply. Instead of saving, people buy. When firms see that they can sell all the goods that they make, the firms increase production, and increase their demand for loans for investment. The bank has to increase the rate of interest for loans. When the bank increases the rate of interest for loans, and with little money in as savings, the bank finds that it has a less savings than loans, so it increases the rate for savings as well. The increased rate for savings causes people to save more and to spend less at the same time that business firms increase production. Total demand falls to meet a rising total supply. Eventually, firms can make all the goods that people demand. Total demand equals total supply. At that balanced level of total supply and total demand, the rate of interest again leads savings to equal investment.

When banks adjust the rate of interest to insure a balance between savings and investment, they also influence consumer demand and the supply of goods made by business firms. In finding a balance between savings and investment through the rate of interest, banks also find a balance between the total amount of goods demanded by consumer-workers and the total amount supplied by business firms. In solving one problem, the banks also solve another problem. In making savings equal investment, banks also lead total supply to equal total demand.

In solving those two problems, the banks solve the problem of capacity as well. A balance of savings and investment solves the problem of supply and demand and it solves the problem only at the level of full capacity. The equalization of savings and investment brings the economy to full capacity.

Competition and the flow of capital lead savings to equal investment, lead total supply to equal total demand, and bring this all together at full capacity.

If we can take it on faith for now that the economy only increases full capacity by natural growth (implementing innovation), then four conditions come together:

(1) Savings equals investment through the mediation of the rate of interest.

(2) Total supply equals total demand at some particular size of the economy. The economy is circular, closed, and self-reproduces.

(3) The size is full capacity. Full capacity means full employment, and it means that business firms can do normal business with reasonable expectations of revenue and of continuation.

(4) Full capacity does not require any artificial growth but it does allow for natural growth through innovation. Natural growth increases full capacity, and thus increases welfare too. As it does so, natural growth brings along the other conditions with it, so that they continue to hold as well.

Classical economists analyzed primarily the first condition about savings and investment, but sensed the other conditions. Neoclassical economists later demonstrated links between the other conditions, and showed where links might break down.

This four-fold solution is so good; and deviations from it so complicated, so hard to understand, so likely to be bad, and so unstable, that economists have tended to fall back on this solution over and over again. This resolution is typical of the static ideal. It is a good base from which to begin thinking but not a good place to end thinking.

Problems. Although we cannot get into problems now, it is best not to leave this wonderful coincidence without a sense that things can get more complicated and things can go wrong. This subsection is optional. If it confuses you, skip to the next full chapter section.

(A) Savings equals investment but not where total demand equals total supply.

(B) Total demand equals total supply but not where investment equals savings.

(C) Savings does not equal investment.

(D) Total demand does not equal total supply.

(E) Total demand equals total supply, and savings nearly equals investment, but not at full capacity.

When any these major aspects of the economy do not coincide, they all upset each other so that nothing might balance. The economy can wiggle without ever settling down predictably. These cases are complicated, and great disparities from balance are not common, so I do not need to go into details here. We will return to simple versions of these cases in the last two chapters of the book on money and on policy.

It is enough just to throw out some complications.

Suppose there is not enough savings to meet investment needs. Banks raise the rate of interest. People save more, so that firms have more to invest, and firms increase production. But, as people save more, they also consume less. When business firms try to sell the increased goods that they make through increased production, firms find that consumers have less money with which to buy the goods that the firms had anticipated producing.

In contrast, suppose there is too much savings, so that firms do not want all that is available. The banks reduce the rate of interest. People save less. Firms scale back on their investment and production. But, as people save less, they wish to buy more. Business firms now find that they have more customers than they had guessed, with more demand for their products, and so now firms want more money for investment.

Not even modern neoclassical economics has been able to sort it all out, and so has fallen back on the simple idea that the rate of interest is the link between savings and investment, and that the economy is in stable peak practical capacity then (total demand equals total supply at full practical capacity).

The state has used versions of this simple Classical model to intervene in the rate of interest so as to affect savings and investment, mostly to favor business firms and investors. This intervention often does more harm than good.

Profit. Now we switch topics. The rate of profit tends to equalize between all ventures, old and new. The rate of profit tends to drop on new ventures until it reaches the general rate that prevails in the economy. In theory, the rate of profit should drop to zero for all ventures in the economy, but that does not happen in a real economy.

As firms invest more in one kind of venture, the rate of profit tends to go down in that kind of venture. For example, when “dot com” business was new, those firms made a high rate of profit. As people invested in them, the rate of profit fell. In contrast, when business firms move capital out of an old, low-profit type of venture, the rate of profit for remaining firms in the old business slowly rises. Natural textiles such as cotton used to yield only a low rate of profit, so capital shifted from them to man-made fibers such as polyester. Slowly the rate of profit on cotton edged back up. When natural fibers became popular again, then the profit rate on cotton went up even more for a while. When an innovation is still new, it tends to make a high rate of profit but the rate tends to fall as business people invest more in the innovation. When computers were still new, computers makers made a lot of money from them, as was the case with IBM, Compaq, and Dell. Now their rates of profit have fallen. The rate fell so low that IBM even got out of the PC business that it had pioneered.

Profit between different ventures tends to equalize. Business firms make about the same rate of profit on making bicycles as on growing flowers. If firms made more profit on flowers, they would move their capital from bicycles to flowers until the rate of profit on flowers fell and the rate of profit on bicycles rose. The reverse would happen if the rate of profit on bicycles was higher than the rate of profit on flowers.

Interest is a kind of profit on money. In theory, the rate of profit should fall to zero for all ventures, including the profit on money, and so including the rate of interest. Flowing capital is like flowing water. River water starts from many hills of different heights but it all flows to the same level in the river. Eventually the river flows to the “ground zero” of sea level.

Contrary to theory, in fact the rate of profit does not equalize between all ventures and it does not

fall to zero for healthy businesses. There is a normal rate of profit that most firms expect to make from year to year, about 5% to 10%. Some firms expect to make as much as 20% per year, such as companies that make drugs. There is also a natural rate of interest of about 5% that seems to prevail regardless of what happens to the rate of profit.

Sustained normal profit and a natural rate of interest are something of a mystery. We will look for sources for sustained normal profit and the rate of interest in later chapters.

The mystery deepens because, if the rate of interest fell to zero, the rate of interest could not equalize savings with investment, or equalize total supply with total demand at full capacity. We need interest, but, just because we need something does not guarantee that we will have it, or that we will have it at the rate we need it. We need a theory of why profit and interest arise in the first place so that we can be sure of relations between profit, interest, investment, savings, total supply, total demand, and capacity.

Classical economists realized that profit and interest should equalize and decline but did not. They did not know what to make of the situation. They had no theory of the general origin of profit or interest although they certainly could explain them in particular cases. They could not explain why profit and interest persisted, why they persisted at particular rates, or why profit persistently differed between different ventures. Classical economists did not worry about this theoretical problem. They took profit for granted and looked at what happened when profit varied; they looked at the flow of capital in response to changes in the rate of profit. For most tasks, this is enough; but it is not enough to deal with deep problems about how the economy works. In the middle 1800s, Karl Marx, following David Ricardo, took this issue seriously, and heroically went where his answers misled him. Neoclassical economists understand the question, and have offered some good answers, but have not offered a generally acceptable answer or an alternative to the Classical model.

This book takes the question of profit and interest seriously but does not rely on Marx. I find answers in standard neoclassical ideas. Looking at the sources of profit and interest helps to understand why inequality and poverty persist in the economy, and suggest the limits of what we might do about those problems.

Sum of Costs. Ordinarily the costs of the components used to make a good add up to about the price of the good. The sum of costs for steel, rubber, plastic, etc. add up to the cost of a bicycle. The sum of chemicals used to make an over-the-counter medication add up to about the price of the medication. If we take into account a normal profit rate of 5% to 10%, then the sum of costs plus the normal profit add up to almost exactly the price of the final good.

To see why, think about what would happen if it were not so. Suppose the sum of costs was more than the cost of the good. Then the good would not get made. Suppose the sum of costs was less than the good. Then many firms would begin to make the good. The firms would pay more for components to the good so that they could make more of the good, so the price of the components would rise. At the same time, the increase in amount of the good would lower the price of the good. Cost would rise to meet falling price until the cost of making the good equaled

the price of selling the good.

This is the same logic that argues for the disappearance of profit. We can fit steady profit into this situation but only after we understand more about rising costs and falling profits in the next few chapters.

When people see that the sum of costs adds up to the final price of a good, they mistakenly think that costs determine the final price. This is a natural way to think, and, in the short run, it is true; but in the long run it is wrong. In the long run, the true relation is opposite: the final price of a good determines the cost (price) of the components that make up the good.

In the short run, suppose that a major cost of lettuce is petroleum products such as diesel fuel as to power the equipment and the irrigation, chemicals to kill bugs, and chemicals to fertilize. If the price of oil goes up, then the price of lettuce goes up. We can reasonably say that the increase in the price of oil caused the increase in the price of lettuce. This is what happened during the Iraq war of the early 2000s with all goods. It began to happen again in 2012 for various reasons, including possible war with Iran.

In the long run, however, this is not true. Only if people want enough lettuce at the increased price would people pay enough for lettuce to support the increase in the price of oil that went into the increase in the price of lettuce. If people did not want that much lettuce, they would buy less lettuce, and thus less oil; and so their decisions would also affect the price of oil through affecting the price of lettuce. Eventually when the price of oil goes up enough, people will stop driving cars so much, switch to public transportation, and switch to alternatives such as electricity and natural gas. Then the price of oil will have to adjust and will quit determining the prices of lettuce and gasoline. The demand for oil will be a strong force in determining the price of oil.

The correct relation in which the demand for the final good determines the price (cost) of the resources that go into its production is called “imputation” or “derived demand”. We will see more of this relation in the chapters that follow. Smith and Classical economists saw all the aspects of this relation but they could not explain precisely why final price (final demand) determined the sum of costs, so they continued to argue as if costs determined the final price. They argued as if costs were an objective reality outside the economy that determined relations within the economy. This is a large error that produced some strange results, one of which we will see later in this chapter under “Say's Law”. A great advance of neoclassical economics was its ability to explain all aspects of the relation between costs and price correctly.

Revolution. Regardless of modest faults, Smith succeeded fully in “Wealth of Nations”. His success amounted to a revolution in thinking about social relations. Smith established these ideas:

(1) The free market regulates itself. It needs no regulator for the vast majority of its operation. It does best when left alone. It leads to greater wealth and a better basis for good government.

(2) The free market is a (A) spontaneous unplanned persistent order, and it is (B) almost fully benevolent.

The market is the first clear example of such an order in social science. The free market can provide the basis for a strong nation.

(3) The market works through self-interest. Self-interest leads not to chaos and to selfishness but to benevolent moral order. Smith inverted the normal ideas between self-interest and outcome. He showed that self-interest not only led to more wealth but also led to the morally correct outcome of freedom, cooperation, and social order.

In Smith, morality and self-interest coincide. The pursuit of self-interest leads to the greater social good, and any interference with the pursuit of self-interest detracts from the greater social good. The “pursuit of self-interest (happiness)” serves the definition of freedom given in some founding documents of America.

Since Smith, social scientists have felt the need to show that social order is (A) moral, (B) benevolent, (C) spontaneous and persistent, and (D) takes care of itself (self-regulates). Social scientists differ in whether they ground social order in the social whole or in individuals but they credit their particular vision of social order with these desired features anyway. They see any social group they do not like as deficient in these features and as corrupted. Any policy that does not promote these features is deficient too.

Many advocates of capitalism identify the free market with the pursuit of self-interest, goodness, morality, and freedom. Satisfaction, goodness and freedom can only come with the free market. Any defense of capitalism is necessarily also a defense of freedom, morality, and goodness. Any interference with their version of the free market is necessarily also an attack on order, freedom, morality, and on the wealth that is needed for a good society. For them, the state is necessarily a friend of capitalism and goodness. Any idea of the state other than their idea of the state, and any state that is not a whole-hearted supporter of capitalism, is necessarily a foe of capitalism and goodness. This attitude takes Smith too far, and is wrong.

Smith says we have to rely on the spontaneous order of the market, that we have to be willing to give up direct control. People do not like to “let go”. They like to keep their hands on the steering wheel. “Only dead fish ‘go with the flow’”. It is natural to fear letting go. It takes courage and practice. It is hard to see the benevolent order that comes of letting go, and easy to cling to the order of interference. In “The Lord of the Rings”, Galadriel saw that, with the Ring, she could force a workable order but an order in which people feared her as much as they loved her. She let go of the Ring only after gut-wrenching effort showed her that keeping the Ring would lead not only to order but also to fear, slavery, and evil. Even people that otherwise extol the free market will not let go of programs that benefit them or that control their enemies. Even people that extol the free market and call for “less government” will not let go but instead insist on using the state for their material and political goals. Not letting go is mercantilism. Smith would disapprove.

Unintended Implications. Some advocates of capitalism stress that it is not only one order particularly well-suited to our times but that it is THE ONLY social order and economic order that is also fully moral. It is the only order that has ever been fully moral and benevolent, and it has been available to people for all the time that people have been on Earth. Capitalism is THE

ONE AND ONLY WAY all people should live always. These people merge capitalism with traditional religion and morality. They find the charter for capitalism in the New Testament, Luther, Calvin, the Torah, the Koran, the Vedas, the Sutras, or Confucius. Any attack on their idea of the market is an attack on their idea of God, the Dharma, or the Taoist Way. They are wrong too.

Wealth Confusion. Smith did not invent confusion about the role of wealth in human life. Capitalism did not begin confusion about the role of wealth in human life. Smith was clear about the subordinate role of material wealth to morality, and he was a person of good heart and high principle. But Smith's argument connected wealth, morality, goodness, freedom, and social order, and those links have bolstered confusion about wealth ever since. It is easy to mistakenly think that being rich automatically makes a person good, being poor makes a person bad, and the more wealth a society has the better it is. Long before capitalism, people made these same mistakes. Smith only provided a rationale.

When people see through this error, they jump to the other pole: having wealth is bad, not having wealth is good, "the best things in life are free", and a good society is one that cultivates spiritual values to the exclusion of material wealth.

The correct path is in the middle. It is hard to have a decent life without a solid material base; but the pursuit of material wealth alone is a trap. Material wealth is a means not an end; but an indispensable means. More wealth does make people happier in general, at least up to a point - but only up to a point. Sane people find this out for themselves despite the traps. Endless TV shows have debated this issue in terms of how much time Dad, and now Mom, should spend on work and how much time they should spend with the children. Both wrong poles, and the good middle, are celebrated in the MasterCard ads that list the prices of various goods and then end with the punch line "priceless".

The problem is that economics gives no guidelines on this question, and it tends to reinforce the idea that "wealth is good". In the movie "Wall Street", this tendency jumped out when Gordon Gecko (Michael Douglas) said, "Greed is good". There is no solid basis for all policy. We will run into this problem again in later chapters.

Adam Smith Is All. For many people, Adam Smith is all of economics, or, more exactly, the self-regulation of the Invisible Hand is all. They do not see the flaws and problems of capitalism, the need to address the problems, and how hard it is to address the problems. They see only that the system can adjust to modest changes if left alone, and mistakenly conclude that it can adjust to anything well enough, including that it can adjust to hurricanes, earthquakes, unemployment, poor employments, poverty, racism, sexism, wars, and drastic technological innovation such as nuclear power. For them, the system is always near an ideal. Progress is inevitable. Poverty is due only to laziness. All other problems stem directly from the state. Material wealth directly indicates personal goodness and social goodness, and the more wealth the better. These people pretty much ignore the rest of this book and they pretty much ignore the wisdom in Smith other than the Invisible Hand. Stephen Colbert constantly satirizes these people by saying "the market has decided, and so it is good" about preposterous situations.

People stop with simplistic Adam Smith for many reasons. Some of them stop because the rest of economics really is hard and can give even clever people headaches. Simplistic Smith works for the majority of cases, and so why make life harder by trying to get too clever? Some people stop because they see the link between simplistic Smith and personal freedom. Simplistic Smith tells us that everything works out fine if we just let people do whatever they want. Personal freedom is so important that there is no point undermining a good thing by trying to get beyond simplistic Smith. Some people stop with simplistic Smith because they benefit from the situation as it is now. They use a defense of the free market as a way to protect what they have whether what they have is really due to the free market or not. The reader needs to encounter the various people that rest on simplistic Smith to categorize them for him-herself.

Some business people invoke Smith as justification for the free market when it suits them, and as justification for mercantilism when that suits them, without realizing how consistently Smith condemned mercantilism, and without realizing the contradiction in their position. Smith would condemn tax breaks, protection, bailouts, and most of the programs that favor business.

Smithian and Non-Smithian. It helps to have a term for a market that runs well, a market that is near the static or the dynamic ideal, and that has few flaws or problems. I call such markets “Smithian”. A Smithian market is stable. It has one price nearly all the time. At that price, the sellers can sell all that they had made with that price in mind; and the buyers can buy all that they had planned to buy. The market tends to return to the price when disturbed. The market adopts innovations fairly easily, finds a new price, and returns to new stability. The markets for most small goods such as shoes, shirts, apples, etc. are pretty close to Smithian. People who rest with simplistic Smith believe that all markets are Smithian.

Some non-Smithian markets suffer the flaws of capitalism, in particular imperfect competition and externalities such as pollution. Other non-Smithian markets wobble in many ways even when they do not suffer from imperfect competition. The price is not stable, the consumers are never sure how much of the goods are available, the producers are never sure how much they can sell or how much to produce, and innovations cause long disturbances without necessarily settling down. In later chapters we will see what leads to Smithian markets or to non-Smithian markets.

Say’s Law. The remaining sections explain ideas of Classical economics that came after Smith. This section shows the need to consider circularity and closure, and shows how the Classical stress on production-supply caused misunderstanding about the balance of supply and demand.

Modern mercantilists use confusion about the balance of supply and demand to get the state to support business.

Jean-Baptiste Say was a French Classical economist of the early 1800s. He developed insights about circularity and closure. His ideas have come down in the form of two aphorisms. These aphorisms are still used today to justify policy, in particular “supply side” economics.

(1) "Supply creates its own demand". No matter how much production expands, people will have enough income to buy the output.

(2) "There can be no general glut". Nowadays we say, "there can be no long-term significant recession, especially a recession with over-production and over-capacity". There might be a surplus of particular goods such as cars but there can be no surplus of all goods so that all producers cannot sell what they have and so have to stockpile for years. There should not have been a Great Depression.

The second idea rests on the first, so I focus on that. The gist of the first idea is straightforward: the economy can expand indefinitely and still balance. If a firm expands production, it has to buy materials and it has to pay workers. The money that the firm uses to expand production finds its way into the general economy. The firm has to pay for the full costs of production. It puts back into the general economy the full costs of production. So the general economy should be able to buy all the production of the business firm. Supply creates its own demand. If General Motors decides to increase production, it has to buy enough more supplies, and it has to pay its workers enough more in wages, so the general economy has enough resources to buy the increased production.

Say's Law does not argue that the workers of any particular industry should be able to buy all of their own product. The workers that make Hummers need not be paid enough so that they can buy up all the Hummers directly themselves. Rather, the economy as a whole (total demand) can buy all the production. Hummer plants have to buy parts so that the suppliers and their workers have some money to spend on Hummers and other goods. Hummer workers spend some of their salary on rent, food, and clothes. The owners of part factories, and their workers, and the landlords, store owners, and store workers, collectively use what they receive from the Hummer factory and from the Hummer workers to buy whatever Hummers the Hummer workers could not buy. Most of the ability to buy Hummers will not come from the Hummer workers themselves but indirectly through the rest of the economy.

Notice that the idea rests on circularity and closure without being fully aware of them. All that the producer spends on new materials and on labor has to stay within the economy or the idea would not work. There can be no leaks. People can only buy from within the economy. Whatever workers get in wages they have to spend on goods, and eventually all goods can only be bought out of collective wages.

Say did not put his ideas in this way, but his ideas still carried this implication, and some of the interpretations of Say's Law that used money brought out this implication: When the economy expands, it expands so the interest rate continues to make sure that savings equals investment and that total supply equals total demand. Each expansion represents a new full capacity where total demand equals total supply (supply creates its own demand), and where the rate of interest makes sure that savings equals investment too. Modern versions of Say's Law rely on this interpretation.

Say's Law makes a lot of sense. Still, we feel that it cannot be fully true, because it is not fully true.

Knowing precisely when it is true or is not true depends on knowing more than we know now about circularity, closure, diminishing returns, and proportion. We cannot go into that detail until later chapters on neoclassical economics. We can still get a feeling now by exaggerating the situation.

When the economy expands or contracts, diminishing returns set in. In case the economy expands, production per good gets less efficient and more expensive. Suppose the factory expands production from 900,000 units to 1,000,000 units, and then expands again from 1,000,000 units to 1,100,000 units. Both increases are 100,000 units but the second increase is less efficient. It takes more energy, labor, and resources for the second expansion.

Partly because diminishing returns vary between industries, and partly because consumer tastes change, when the economy expands or contracts, the internal proportions change. Suppose the car industry took up 10% of the economy, and then the economy expanded 20%. The car industry would no longer take up 10% of the economy but might take up only 8% or as much as 12%. Other industries would change their roles as well.

Both kinds of change mean that the economy might not balance as it did before, so that total buying power would not be able to buy the new production, that is total demand would not equal total supply. There is only one full capacity at which the economy balance well, total demand equals total supply, and the rate of interest keeps savings equal to investment. If we move away from that situation, we lose balance.

Suppose the Hummer factory increased production not by 1% but by 10%. Then the effect of Say's Law might be true. The expansion of demand might be able to buy up all the expansion of supply. Suppose the Hummer factory got excited at its success, and increased production by 100%. Then the effect probably would not work out. It is just too much. More likely, people that received money from the Hummer factory would spend the money so much on other kinds of goods that not enough of it would get back to buy all the extra Hummers.

Now suppose that the entire automobile industry increased production 10%. That might work as well. But a 100% increase in production would not work. Suppliers and workers would spend too much of their increased salaries on boats and LCD large-screen TVs instead.

Now suppose total supply in the economy increased by 10%. In this case, the suppliers and workers have to spend all their money (total demand) within the economy, and so it seems as if they do have to buy all the new production. Yet the workers do not wish to work that much. They prefer some leisure instead. Or they decide to save some of the money, rather than spend it on the increased production. We might be able to force through an increase of 1% or 2% but not of 5% or 10%.

Suppose that a forced increase of production of 1% actually works. The state gets excited and decides to do it again, and again, and again. This repetition will not work, not even in small doses. Repeated small increases in production eventually amount to the same thing as one large

increase in production. Eventually the small doses cannot work, and they cause imbalance and distortion. Yet this is a common state policy.

Say's Law depends on a rigid relation between the parts of the economy, in particular on a rigid relation between supply and demand. It depends on supply and costs being something absolutely given and external to the economy – which is not true. Those conditions are almost true when we have only little changes around a healthy balance. They are not true when we have bigger changes.

When the economy expands, its efficiency declines and it changes internal proportion. When it changes internal proportion, it changes the way it interacts and balances. A forced 10% increase in supply would not lead to a new balance even if the increase were across the board.

According to Say's Law "There can be no general glut" because whatever money was used to produce goods in general is available to buy the goods in general. New total demand is supposed to follow total supply because total supply creates enough new total demand. There might be a surplus of Hummers for a short time, but the money used to make the extra Hummers will show up in the economy somewhere and so lead to adjustments and a new balance. This too is true in short ranges around the balance of a healthy economy but it is not true of a large move away from natural full capacity, of repeated small forced increases as through tax breaks, when the economy is unhealthy, has too much imperfect competition, or suffers too much from the other flaws and problems of capitalism.

Say and Smith appreciated the balance of supply and demand. Say and Smith stressed the role of supply because the aristocratic ruling class impeded capitalist factory owners, and because capitalist factory owners were the biggest source of progress in their time. Say's Law is a vigorous argument for letting capitalist factory owners loose. In stressing supply-production for their time, Say and Smith inadvertently created a bias in economics from that time onwards for supply over demand, and created a tendency for economics to be used as an apologetics for business. I doubt Smith would approve.

To get a better sense that we have to be careful with Say's Law, keep in mind that it also works in reverse. Suppose we shrink production by 10%. Then the factory owners have fewer goods to sell, but they also pay their employees less in salary. The employees can still buy all the goods with their reduced salaries, and so everything still works out. The economy should balance at a lower level. People might actually be happier with fewer material goods and less stress. In fact, when the economy shrinks, we usually have a recession, the economy does not balance, and many people are unemployed. I doubt economists and business people would like to interpret Say's Law in this opposite direction of shrinkage. Yet they refuse to see that the same imbalance occurs when we try to go the other way of continued expansion not through natural growth.

Malthus and the Landlords. Thomas Malthus was a country parson who wrote about economic issues in the first two decades of the 1800s. He had many good ideas but he did not write very well and so it is hard to tell exactly what he meant. This section tries to make sense of some of his ideas he had about demand, circularity, and closure. In a sense, Malthus was the opposite to

Say because stressed demand; but Malthus expressed himself so badly that nobody listened until Keynes during the Great Depression.

To get across Malthus' arguments, I first paint a picture of an agrarian version of the static ideal. Suppose there are no landlords and there is no rent in the economy, and the entire economy is made up of only farm managers and farm workers. Farm managers earn their salaries, and get no more than they earn. The farm managers do not collect rent. There are no farm owners to get rent. The various farms each produce one kind of good, such as corn or bacon, so the workers on one farm have to buy goods from other farms. Farm workers and farm managers can get their goods only from what they grow on their own farm or from selling (trading) the goods that they grow on their own farm. They get all that they need from their own farm and from other farms. The economy is closed, circular, and self-reproducing. They produce all that they need and all that other farms need. Pig farms get all the corn they need from corn farms. Corn farms get all the fertilizer and bacon they need from pig farms. Altogether, all the farms make exactly what everybody needs and wants, and no more. If the farms tried to make more, nobody would buy it. If anything is lacking, somebody will grow more. If not enough pigs are raised, somebody will switch from corn to pigs until just the right amount of pigs and corn are raised. All that is made can be bought with the wages of all the workers and owners, and nothing is left over. Nothing can be left over. This little scenario does not say that people live well or live poorly. It only says that everything makes everything else (circularity), what is needed comes only from the system (closure), and it all works out (self-reproducing balance).

Now introduce landlords. The landlords do not work on the farm themselves; they own the farms. Still, the landlords demand rent. The farm managers and farm workers now have to grow more pigs and corn so as to pay the landlords rent. What role does this extra production play in the economy? What role does the rental income play? In particular, is the rent given to the landlord part of the circularity, closure, and self-reproducing balance of the system?

On the one hand, if the rent given to the landlords is necessary to the system, then why could we think of the system perfectly well without the rent? What causes the rent of the landlords to be produced? Where is the rent necessary? Where does it go?

On the other hand, if the rent is not necessary, then how does it fit in once we have it? Suppose that the landlords spend what they receive. The landlord of a pig farm trades the pigs that he receives in rent to the corn grower for corn, to the cobbler for shoes, and to the apple grower for apples. Once they have gotten used to getting orders from the landlord, if these people did not receive their regular orders, then these people could not get along and the system would not balance or close. If the landlords stopped getting rent, then a large portion of the system would disappear, and, at the least, the system would have to rearrange.

We both need rent and do not need rent. Rent is both in the system and out of the system. Rent is neither quite demand nor quite supply. The system neither balances nor does not balance. The presence of rent makes the system "indeterminate".

This problem is bigger than with rent. Rent can represent all kinds of "unearned income",

primarily from imperfect competition, including modern rent from real estate, profit from factories, from modern farms, and from state interventions. Even without the aristocratic landlords, the same problem is true of modern day capitalist economies where large firms have replaced large landlords. Large firms make profit not from rent but from control of markets. It is hard to tell if their profits are in the system or not. It is hard to tell what role their profits play in a closed, circular, self-reproducing, balanced economy. It is hard to tell what is needed to balance the system and what is not needed.

The role of unearned income (rent or profit) probably contributes to the business cycle. On the one hand, if the system is used to having unearned income flow through, and the flow is impeded, then there is not enough money to buy all the goods, there is not enough demand. The lack of demand might contribute to the business cycle. It might contribute to making the economy stick at lower than full capacity. On the other hand, if the economy were in a down phase, and landlords could spend any unearned income that they had held back, the increased demand from their new spending might help the economy out of the down phase. Malthus hinted at all this, and Keynes tried to make it all precise. In later chapters we will see that the state tries to take over the role that Malthus suggested for the landlords by increasing demand during the down phase of the business cycle.

On yet another hand, if we are not in a down phase, and the unearned income (rent or profit) is suddenly unleashed, then there is too much demand. Factories have to increase production and have to hire more workers. This effect might add to the up phase of the business cycle. In that case, the state would have to cut back on demand. Modern neoclassical economists have not studied this aspect of the situation very much.

Malthus and Population. While Malthus was alive, workers in factories did get better off but they did not get better off as fast as production increased. They seemed always to take four steps forward and three steps backward. Malthus explained it this way: People have a strong natural tendency to reproduce. When people make more money, they have more children. Instead of spending their money on a better quality of life, they spend it on more quantity of life. The working class was doomed to live always near subsistence level unless they learned to control their reproduction.

All during the time of Malthus, this was true. Then, in the middle 1800s, suddenly it was not true. Workers began to have fewer children, and the quality of life improved for everyone. Increases in production contributed to better quality of life rather than to more quantity of life. Exactly why this happened remained a mystery until modern theories of evolutionary biology made better sense of reproductive strategies after the 1960s. Classical economics and neoclassical economics could not explain it at all. We have to understand it and other important aspects of human nature if we are to make a realistic economics. This change in reproduction is important in the next chapter of the book.

John Stuart Mill and Working Class Stratification. John Stuart Mill standardized Classical economics in the middle 1800s. His textbook on Classical economics was one of the greatest, and most influential, textbooks in any subject ever. It was used until the 1890s.

Under ideal capitalism, people should flow to various jobs like capital between ventures. People should change jobs to follow wages and to follow the success or failure of various ventures. Children need not have the same jobs as their parents, and need not remain stuck in the same socio-economic class. When cars do well, farmers get jobs making cars. When computer games do well, workers on assembly lines train to get jobs programming games. The daughter of a policeman could become a welder or the mayor of the city.

In real life, it is far more likely that children have a job similar to their parents and have the same socio-economic status as their parents. The daughter of a policeman might become a beat cop, detective, or nurse but she is likely to stay in that range. In Mills' day, children often had exactly the same job as their parents, often in the same factory. That happens as well in our day, and it was standard during the heyday of powerful unions from the 1940s through the 1970s. The son of a Teamster or an Autoworker often became a Teamster or an Autoworker, often on the same dock or on the same floor. The real job market is more organized than we would expect in a free job market. The real job market is imperfect.

Neoclassical economists call this kind of organized market "structured" whether it is for jobs or for laundry detergents. It is a form of imperfect competition, and it has the same distorting effects as unfair competition among business firms. We will see it again in the chapter on labor and wages.

Directed Savings and Investment. If we restate them in modern terms, together, the ideas of Malthus on population and Mill on labor remind us of Smith's ideas about savings and class. Instead of talking in terms of capitalist factory owners versus landlords, we talk in terms of rich people versus working class people. Savings varies by income, and income is the biggest determiner of class. People that make little save little, both absolutely and as a proportion of their income. A person that makes \$20,000 per year might save only \$1000, or about 5% of his/her income. In contrast, people that make a lot save a lot, not just as a quantity of money but also as a proportion of their income. A person that makes \$200,000 per year might save \$50,000, or about 25% of his-her income. There are practical reasons for this disparity that we will look at in later chapters.

This relation has been used to justify giving tax breaks to rich people, even at the expense of poor people. Smith stressed the need for savings for growth and progress. If savings are important, then it seems as if we need to make sure that we maximize savings. To maximize savings, we want to direct income and wealth to the people that save the most. The people that save the most are the people who already have a lot. So we ought to redistribute wealth toward the people that are already wealthy, even if, to do so, we have to tax the people that are not wealthy.

This argument is a false distortion of Smith's idea that the state should not overly-tax capitalist factory owners but should allow capitalist factory owners to gather their fair share of profits for reinvestment. In modern times, enough money is available for investment so that we do not have to give more money to the rich, especially at the expense of the poor. Of course, we should not over-tax the rich either. We will meet these ideas again in later chapters.

Cantillon Effect. Richard Cantillon lived in the early 1700s in Ireland and France. About 1730, he wrote a brief brilliant summary of how the market works. His book circulated informally but was not published. His writing likely influenced Smith and Classical economists but the line was never clear until the book was rediscovered in the late 1800s.

Cantillon wrote about the effects on Europe of the discovery of precious metals in the Americas. He pointed out that the effects varied by country because where the wealth entered the economy varied by country. In some countries, the wealth entered through merchants and the normal market mechanism, such as England. Those countries tended to do well. In other countries, the wealth entered through the state and the military, such as Spain. Those countries tended to do poorly. It is not necessary here to understand why they did well or poorly. It is important to keep in mind that we cannot understand the effect of any change unless we see where the change occurs and follow the chain of influences. If we want to know how computers affect the United States or China, we have to see how computers are introduced and what happens as a result. I call this need to look at places and situations the "Cantillon Effect". A version of it is the savings problem just mentioned above where we have to think not only about the total amount of savings for investment but also from which class the wealth might come and to which class the wealth might go. We will need the Cantillon effect later in the book when we look at the business cycle and at how the state tries to manage money, growth, and capacity. Cantillon was a brilliant observer and was ahead of Classical economists in many ways. The Cantillon effect anticipates ideas from neoclassical economics.