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June 28 – July 8, 2011

## The Economist.com Debate: Manufacturing

*“This house believes that an economy cannot succeed without a big manufacturing base.”*

### Opening statements

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The moderator's opening remarks

Jun 28th 2011 | [Patrick Lane](#) 

Welcome to the latest of *The Economist's* online debates. Our topic for the next few days is one that has divided economic practitioners and commentators for as long as anyone can remember: how important is manufacturing? This old question has had a new lease of life since the financial crisis of 2007-08. To some, this is a cautionary tale of the celebration of finance and the neglect of manufacturing. Some economies that had seemingly come to rely on financial services, such as America's and Britain's, have struggled since. Meanwhile, Germany, a manufacturing power almost written off a few years ago, has performed strongly; and China, the world's workshop, has continued to clock up giddy growth rates. There is more to services than finance, of course; but those who believe that making things is the basis of economic prosperity may see in all this a degree of vindication.

Others may say that the truth is more complicated. Japan, another place where prosperity has been built on making (and exporting) things, has stagnated for 20 years. And while China's boom has owed much to manufacturing, India has been enjoying a largely service-based surge. Look over a longer period than the few years since the financial bust, and you see that most rich economies have shifted the bulk of economic output (and to a greater degree, employment) away from manufacturing and towards services, and have done pretty nicely. Maybe manufacturing is not the be-all and end-all. And people on both sides, as well as neutrals, may wonder where manufacturing ends and services begin. Makers of many things, from aircraft engines to cars to telephone networks, will tell you that they do not simply make and sell fancy combinations of metal and plastic: customers want advice, design and maintenance too, as part of the deal. Manufacturing and services are complements not substitutes.

The chief protagonists in our debate are distinguished economists: Ha-Joon Chang, of Cambridge University, who is proposing the motion, and Jagdish Bhagwati, of Columbia University, who is opposing it. Mr Chang starts by noting that even apparently service-based economies in fact have strong manufacturing foundations. Much of the shift away from manufacturing, he argues, reflects inherently faster productivity growth in that sector; some of the measured productivity growth in services, notably retailing, reflects lower quality and is thus more apparent than real. Deindustrialisation and slow manufacturing productivity growth hurt a country's ability to export and eventually lead it into balance-of-payments difficulties. As for tradable services, they too depend in the long run on a strong manufacturing base.

Mr Bhagwati, by contrast, believes that manufacturing has been fetishised by economists since Adam Smith. Technical progress is not confined to manufacturing: indeed, he says, there is evidence that retailing is the most progressive sector. Nor is it plain that progress in services depends on that in manufacturing in the same country. As for the financial crisis, he argues, in effect, that the baby should not be hurled out with the bathwater: though some financial "innovation" was destructive, some has surely done some good.

This promises to be a lively debate. There are conceptual arguments to be played out. How, for example, is manufacturing defined? What constitutes a "base": having factories on home soil, or keeping hold of intellectual property? What difference does it make if supply chains are spread around the world? And in a debate with such a long history, there are surely plenty of data to be brought to bear too. These are not just questions for Mr Chang or Mr Bhagwati, or for the guest commentators who will contribute later. They are questions for you, too, the readers on the "floor" of our virtual debating chamber. I do hope that you will join in—and that you enjoy the debate.



The proposer's opening remarks  
Jun 28th 2011 | [Ha-Joon Chang](#) 

I propose that the state of a nation's manufacturing base (its size and competitiveness) is the most important determinant of its prosperity.

Hearing this motion, some may ask: how about countries like Switzerland and Singapore, which have become rich through services, like finance, tourism and trading; don't they show the viability of service-based prosperity?

Actually, they show the exact opposite. According to UNIDO data, in 2002, Switzerland had the highest per head manufacturing value added (MVA) in the world—24% more than that of Japan, the second highest. In 2005, it ranked second, after Japan. Singapore ranked third. So these supposed "model" service-based economies are in fact two of the strongest manufacturing nations in the world.

Of course, there are some countries, such as Australia, that maintain high living standards without a big manufacturing sector, thanks to exceptional natural resource endowments. But most other countries are not so lucky. Without a substantial and productive manufacturing base, it is impossible for them to attain high living standards.

There is truth in the argument that above a certain level of development, countries become "post-industrial", or "deindustrialised". But that is only in terms of employment—the falling proportion of the workforce engaged in manufacturing. Even the richest economies have not really become post-industrial in terms of their production and consumption.

From expenditure data in current (rather than constant) prices, it may appear that people in rich countries are consuming ever more services, but that is mainly because services are becoming ever more expensive in relative terms, thanks to structurally faster productivity growth in manufacturing.

By their very nature, many service activities are inherently impervious to productivity increases. In some cases, the very increase in productivity will destroy the product itself. If a string quartet trots through a 27-minute piece in nine minutes, would you say that its productivity has trebled? For some other services, the apparently higher productivity may be due to the debasement of the product. A lot of the increases in retail service productivity in countries like America and Britain have been a result of lowering the quality of the retail service itself—fewer shop assistants, longer drives to the supermarket, lengthier waits for deliveries, etc.

There are some service activities, such as finance, telecommunications and transport, which have had fast productivity growth in recent periods—sometimes even faster than those of some sub-sectors of manufacturing. However, these are mostly "producer" services, for which the main customers are manufacturing firms, so their growth is in large part dependent on the vitality of the manufacturing sector. Moreover, when it comes to financial services, the 2008 financial crisis has revealed that much of the recent productivity growth had been due to "financial innovations" that obscured (rather than genuinely reduced) the riskiness of financial assets, thereby allowing the financial sector to raise its productivity at an unsustainable rate. With the forthcoming tightening of financial regulation across the world, productivity growth in financial services will significantly slow down.

But, one may ask, if de-industrialisation is due to the very dynamism of a country's manufacturing sector, isn't it a good thing?

Not necessarily. The fact that de-industrialisation is mainly caused by the comparative dynamism of the manufacturing sector vis-à-vis the service sector does not tell us anything about how well

it is doing compared with its counterparts in other countries. If a country's manufacturing sector has slower productivity growth than its counterparts abroad, it will become internationally uncompetitive, leading to balance-of-payments problems in the short run and falling standards of living in the long run. In other words, de-industrialisation may be accompanied by either economic success or economic failure.

Even if it is of the "successful" variety, deindustrialisation is likely to have a negative effect on a country's balance of payments because services are inherently more difficult to export. At the root of the low "tradability" of services lies the fact that many require their providers and consumers to be in the same location. No one has yet invented ways to provide long-distance hairdressing or house cleaning. Of course, this problem will be solved if the service provider (the hairdresser or the cleaner in the above examples) can move to the customer's country, but that in most cases means immigration, which most countries restrict heavily.

Given this, a rising share of services in the economy means that the country, other things being equal, will have lower export earnings. Unless the exports of manufactured goods rise disproportionately, the country will not be able to pay for the same amount of imports as before. If its de-industrialisation is of a negative kind accompanied by weakening international competitiveness, the balance-of-payments problem could be even more serious.

To be sure, not all services are equally non-tradable. There are some high-value producer services that are highly tradable, such as banking, consulting and engineering. However, even in Britain, which is most advanced in the exports of these services, the trade surplus they generate is well below 4% of GDP, just enough to cover the country's manufacturing trade deficits. In the case of America, the surplus is less than 1% of GDP, nowhere near enough to make up for its manufacturing trade deficits, which are also around 4% of GDP. America has been able to maintain such a large manufacturing trade deficit only by borrowing heavily from abroad.

Moreover, a country's ability to export many of these producer services cannot be maintained in the long run without a strong manufacturing sector. In services like engineering and design, insights gained from the production process are crucial. Given this, a weakening manufacturing base will eventually lead to a decline in the quality, and exportability, of these services.

While a simplistic "manufacturing good, services bad" viewpoint is unwarranted, we undervalue the manufacturing sector at our peril. It has been at the foundation of human material, and social, progress at least since the Industrial Revolution and it is likely to remain so in the foreseeable future.

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The opposition's opening remarks  
Jun 28th 2011 | [Jagdish Bhagwati](#) 

Bill Emmott, a former editor of *The Economist*, is reputed to have remarked wittily about the "manufactures fetish" that most people think that unless one makes things that can be dropped on one's foot, they are not worth making. He would have been wittier if he had changed it to dropping them on one's foe's foot.

As is often the case, this fetish has the highest pedigree: no less than Adam Smith himself. We know of course that Smith is often misunderstood, as when he is condemned by liberals (in the American, not the Manchester School, sense) as an unqualified proponent of laissez-faire, whereas he qualified his support for the division of labour by arguing that specialisation on the narrowest of tasks and endless repetition of them would turn workers into morons and that good governance supplying education to offset this was necessary.

But, make no mistake, the founder of economics indeed dropped a brick, even a boulder, when he propounded the fallacy that I have called the manufactures fetish. In Book II of "The Wealth of Nations", he condemned as unproductive the labours of "churchmen, lawyers, physicians, men of letters of all kinds; players, buffoons, musicians, opera-singers, opera-dancers, etc." Perhaps, with Shakespeare, he may be right about lawyers; but surely not about Vanessa Redgrave, Monty Python, Salman Rushdie and Kiri Te Kanawa.

But if Smith's error, which prompted the Soviets to omit services from their computation of GNP, is now relegated to the history books, the manufactures fetish continues to exercise a "fatal attraction" and resurrects itself periodically, but with different rationales.

The most influential revival was by my Cambridge teacher, Lord Kaldor, who was one of the most eminent economists of his generation. He raised an alarm in the mid-1960s over British "deindustrialisation". He considered manufacturing to be more technically progressive and contrasted it with services, which he regarded as inefficient and technologically stagnant. I guess his view of services was formed by casual empiricism: stepping out of an Oxbridge college, one often saw small shops selling Cadbury's chocolates for a couple of shillings and then, turning the corner, one saw small, traditionally outfitted post offices. Lord Kaldor even managed to persuade the chancellor of the exchequer to impose a Selective Employment Tax in 1966—reversed in 1973—which taxed employment in services (with an amusing exemption for service at the High Table where dons like Lord Kaldor and me ate our sumptuous dinners).

The problem was that Lord Kaldor had not registered the fact that modern services were technologically quite progressive. Indeed, the recent work of Dale Jorgenson of Harvard, the

most prominent expert on measuring technical change, shows that retailing is the most progressive sector. (This is aside from the problem that, if the returns to better technology accrue to the firm, there is no reason to subsidise: one needs to establish an externality to advocate a subsidy. Besides, since Lord Kaldor believed that manufacturing output was the source of the alleged externality, the theory of optimal intervention also tells us that the appropriate subsidy would have to be related to output, not to labour.)

The same fallacy was to resurface when a similar but within-manufacturing argument was made later in America that semiconductor chips should be favoured over potato chips as the manufacture of the former was considered technically advanced. But when a reporter visited a factory making Pringles, the potato chips that nest perfectly on one another in the little boxes in the mini-bars of upscale hotels—unlike the uneven ones that our grandmothers made—he found automated production, whereas semiconductors turned out to be manufactured in a mindless fitting onto circuit boards. Reality was the opposite of the rhetoric.

The Kaldor worry about deindustrialisation resurfaced two decades later in 1987 when two political scientists from the University of California at Berkeley, Stephen Cohen and John Zysman, argued that "manufacturing matters" because, without it, other activities including services would be destroyed as they were in a tight complementarity production wise. They asserted that if you offshore "the tomato farm, you offshore or close the ketchup plant ... No two ways about it". I responded with sarcasm: "As I read the profound assertion about the tomato farm and the ketchup plant, I was eating my favourite Crabtree & Evelyn vintage marmalade. It had not occurred to me that England grew its own oranges."

But if Lord Kaldor did not succeed for long in Britain, and Cohen and Zysman did not even get off to a start in America, the most recent return of the manufactures fetish, most notably in America but also in a milder version in Britain, may turn out to be more potent. The push for manufacturing has come in the aftermath of a devastating financial crisis, which exposed the asymmetry between financial and non-financial innovation. The latter poses problems of what Schumpeter called "creative destruction": ie, how to prevent Luddite reactions. But financial innovation leads to the possibility of what I have called "destructive creation": ie, a huge disruption of the financial system as we have just experienced. The phrase "innovation" lulls us into the false equation of financial and non-financial innovation. Of course, Paul Volcker's remark that the only useful financial innovation was the invention of the ATM is witty but it is not good economics: some financial innovation has surely done good just as Milton Friedman showed that speculation can be stabilising.

But the fact remains that many today regard the financial sector as not just unproductive, but also counter-productive. This, in turn, has fed the revival in the public domain of the view that therefore manufactures must be supported. But this is a non sequitur. Even if you wished to reduce the size of the financial sector, you would not have to go into manufacturing. DHL and Fedex are, to recall Mr Jorgenson, very innovative; we do not have to encourage cement mixers. Non-financial services are no sweat, and produce little sweat, compared with a great deal of manufacturing.

Finally, at least in America, the manufacturing sector attracts a lot of subsidies. States compete to attract manufacturing firms, with tax holidays, land grants and much else; few states do that for services or agriculture. Do we need to support the manufacturing sector even more, just because of shoddy arguments?

## Rebuttal statements

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The moderator's rebuttal remarks  
Jul 1st 2011 | [Patrick Lane](#) 

We are now in the second phase of our debate, in which Ha-Joon Chang and Jagdish Bhagwati set out their rebuttals to the opening arguments. They are joined today by Geoffrey Owen, of the London School of Economics; and before the final arguments appear Will Hutton, of the Work Foundation, will also contribute.

The rebuttals are perhaps a little more technical than the opening remarks, but in essence, like the whole debate, they are exchanges about the sources of economic growth. Does productivity growth stem largely from manufacturing, or can other sectors provide it just as readily? Does technical progress come mainly from improvements in the making of things? Mr Chang argues yes: he takes issue with Mr Bhagwati's comparison of two types of chip, silicon and potato. The greater sophistication of semiconductor-making, he says, cannot be denied. For his part, Mr Bhagwati notes that as economies develop rising incomes per person are associated with a greater share of manufacturing in GNP—but argues that causation runs from growth to manufacturing rather than the other way.

Our two debaters also argue over retailing: evidence for its dynamism is not clear-cut, says Mr Chang, and retailing depends on manufacturing anyway; Mr Bhagwati replies that Mr Chang has missed the importance of online shopping, with the variety and improvement in service that it offers.

Both have much more to say. Plenty of other points could be drawn out of their rebuttals and the lively floor debate, but I will confine myself to two. One is geography. The connections between sectors cross borders. Consider the exchange between two speakers from the floor: one, writing as heu49fEZSm, remarks that Hong Kong is doing pretty well with a smallish manufacturing sector; another, labelled FbGDuwrvg, retorts that that may have something to do with the huge workshop next door.

Another is the division of the economy into manufacturing and other sectors—which several floor speakers consider as good as meaningless. Most of our debate has focused on manufacturing and services, but both our debaters remind us that there is another, much older part of the economy, agriculture, where technological change has also carried on apace. For Mr Bhagwati, hybrid corn, the green revolution and genetic modification are reminders that "we cannot afford to think only of manufacturing as the key to prosperity". For Mr Chang, the

success of the Netherlands, a small place, as an agricultural exporter reflects the prowess of its chemical and electronics industries, which has enabled the Dutch to "industrialise" agriculture. Fertile ground for debate, you may say.

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The proposer's rebuttal remarks  
Jul 1st 2011 | [Ha-Joon Chang](#) ■

Jagdish Bhagwati, with his characteristic flair, has made an engaging case against what he calls the "manufacturing fetish".

Unfortunately, his designated leading opponents are all ghosts from the past, so to speak. Nicholas Kaldor was writing in the 1960s, while Stephen Cohen and John Zysman published their book in 1987. The literature has moved on quite a lot since then.

In particular, thanks to the pioneering work of Robert Rowthorn and his associates, most experts now agree that the central force behind deindustrialisation is the relatively higher productivity growth in manufacturing. Dale Jorgenson, who Mr Bhagwati cites as someone whose data support his position, is no exception. This is a problem for Mr Bhagwati, because his argument hinges on denying that manufacturing has faster productivity growth.

Moreover, he is not even correctly characterising the "ghosts". He "guesses" that Kaldor formed an unfavourable view of services because he saw only the "mom-and-pop retail shops" and "traditionally outfitted post offices" of a sleepy university town. However, Kaldor was a careful applied economist, advising governments all over the world. I cannot speak for the dead, but it is highly implausible and deeply insulting to suggest that Kaldor based his argument on this kind of "casual empiricism".

If anyone is engaged in casual empiricism, it is Mr Bhagwati. For example, in trying to argue that potato chips are actually more high-tech than semiconductor chips—evidence against what he calls the within-manufacturing variety of the pro-manufacturing argument—he cites a reporter, according to whom "semiconductors turned out to be manufactured in a mindless fitting on to circuit boards" while Pringles potato chips were made through "automated production" (which, however, being done by a machine, must also be "mindless").

The reporter is probably describing—in a highly simplified manner—the "packaging" process, which is only the last, and the least sophisticated, part of semiconductor manufacturing. This is

preceded by the "fabrication" process, which requires the handling of very high-purity materials and the use of very precise and expensive processes (including photolithography, etching, doping and dicing of silicon wafers). All this must occur in a "clean room" dampened against vibration and kept within narrow bands of temperature and humidity. And all this is even before we talk about the high-technology design and engineering involved. Pringles may use some high technology (the design process involves a super-computer), but there is simply no comparison between the two products in their technological contents.

If triumphantly declaring that "[r]eality was the opposite of the rhetoric" on the basis of an observation by an ill-informed reporter is not casual empiricism, I do not know what is.

Having said that, I agree with the point that Mr Bhagwati is trying to make here, albeit with completely wrong examples—that is, we cannot judge the technological characteristics of an activity simply by looking at the final product. Or, to put it differently, what matters is not what you make (or do, if it is a service activity) but how you make it (or do it).

Take the case of the Netherlands. Unbeknown to most people, it is world's third largest agricultural exporter, despite having little land (it has the world's fifth highest population density). This has been possible because the Dutch have "industrialised" agriculture by, for example, deploying hydroponic agriculture (growing plants in water) that uses computer-controlled feeding of high-quality chemicals—something that would not have been possible if the Netherlands did not have some of the world's most advanced chemical and electronics industries. In contrast, despite being the world's second most high-tech exporter (measured by the share of high-tech products in manufactured exports), the Philippines has only \$2,000 per person income because it makes those products with other people's technologies.

Mr Bhagwati is right in saying that we should look into the technological processes behind a product, but the point is that we actually do so.

When we look at the detailed technological processes as well as the standardised quantitative indicators of different activities' technological contents and dynamism (eg, various productivity estimates, indexes of technological contents developed by Sanjaya Lall and others), we find that, on the whole, the manufacturing industry is more dynamic than the service industry. We also see that most of the more dynamic elements of the service industry are dependent on the manufacturing industry. The wholesale and retail trade sectors may be the most dynamic elements of the service sector (although this is only according to the Jorgenson studies and there are other studies that contradict that), but what are they moving around? Mostly manufactured products. Who are the "producers" in "producer services", another dynamic element of the service sector? Mostly manufacturers.

Having seen financial services implode, Mr Bhagwati is now trying to advance his pro-service line by arguing that countries can prosper on the basis of things like "DHL and Fedex" or, as he proposed elsewhere, "professional therapy, nursing and teaching". In doing so, he is seriously misleading the rest of us.

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The opposition's rebuttal remarks  
Jul 1st 2011 | [Jagdish Bhagwati](#) 

Unfortunately, Ha-Joon Chang adds new errors to those that the proponents of the "manufacturing fetish" perpetrate. Let me concentrate on the principal ones.

First, he says that rich countries are generally manufacturing nations, and that (except for cases where there are "natural resource" endowments) "without a substantial and productive manufacturing base, it is impossible for them to attain high living standards". As it happens, whereas Mr Chang cites stray examples like Japan and Switzerland, we know from the work of Harvard development economist Hollis Chenery (*American Economic Review*, 1960) that increasing per person incomes are associated with a greater share of manufacturing in GNP. But several points must be made.

First, it is growth that is likely to cause the share of manufacturing to rise, rather than the other way around. I argued long ago (1997), in commenting on Chenery, that there are good analytical reasons to think that manufacturing will rise as a share of GNP as GNP grows. First, there is a "consumption bias" in favour of manufacturing: the income elasticity of demand has often been estimated to be in excess of unity for manufacturing. So, in a closed economy where production and consumption must match, production in favour of manufacturing must follow. But then there is also a "production bias". We know from general-equilibrium theory (the technical proposition is known as the Rybczynski theorem) that if manufacturing is capital-intensive, then capital accumulation will shift resources towards manufacturing and away from other activities. So, we have a perfectly good explanation for the Chenery finding.

Second, it is also important not to jump from a descriptive Chenery regression to prescription, as Mr Chang seems to do. When countries plan, for example, investment allocation, there is nothing that requires them to follow the Chenery regression as if they were trekkers closely following the footprints of the Abominable Snowman. Thus, within manufacturing, India opted to go for heavy industry, and many critics said that the historical evolution was from light manufacturing to heavy manufacturing. But that criticism was mistaken. If India wanted to raise the investment rate, and this required increased availability of machines, and the economy was closed at the margin as export earnings could not be increased, it followed that India would have to produce its own machines, no matter what descriptive regressions showed had happened earlier and elsewhere. India's decision turned out to be mistaken only because its assumed export pessimism was unwarranted.

Third, Mr Chang makes assertions about productivity increases in the retail sector which are way behind the curve. For instance, many of us today buy online, which offers a huge variety of products that even the large stores cannot carry and also prompt service. Mr Chang's complaints about fewer shop assistants and longer drives to the supermarket are increasingly matters that are behind us as the retail sector embraces modern technology.

Fourth, Mr Chang's notion that only producer services experience productivity change, and not services consumed by consumers like him and me, is also incorrect. For instance, a major growth sector today is medical tourism where the user goes to the provider. In all four modes of services that are now embodied in GATS (the General Agreement on Trade in Services), there is enormous potential and a growing trend. I have written several articles recently with Sandeep Madan to the effect that international transactions in medical services promise enough savings to America to eliminate the need for President Obama to increase taxes to finance Obamacare.

Fifth, this also means that Mr Chang's view that services will mean "lower export earnings" has no basis as a realistic appraisal shows that services are already becoming major items in world trade.

Sixth, I just do not see how he can justify his assertion that, without a manufacturing sector, quality and exportability of services cannot be maintained. If General Electric manufactures its turbines abroad, why can it not use that experience in providing, in production of some service in America, whatever know-how that is gained from the manufacturing operations undertaken elsewhere through transfer of necessary experienced personnel from overseas to home? This is the Cohen-Zysman fallacy that I noted in my opening statement.

Seventh, we know from hybrid corn and the green revolution that enormous technological change also occurs in agriculture, which Mr Chang largely ignores. Today, with the huge shortfall in agricultural production, we cannot afford to think only of manufacturing as the key to economic prosperity. With genetically modified (GM) crops representing massive technological change in agriculture, it is time for us to discount the notion that they are Frankenstein foods to be avoided regardless of scientific evidence. Else, we would be in danger of fearing an improbable Frankenstein and welcoming the Grim Reaper (as food production fails to match our needs).

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## Audience participation

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Featured guest

Geoffrey Owen 

In all the advanced economies the importance of manufacturing as a source of employment and value added has been declining in favour of services, but the rate of decline has varied from country to country. According to UNCTAD figures for 2008, the share of manufacturing in GDP was 23% in Germany, 21% in Japan and 18% in Italy, while America, Britain and France were clustered around 13-14%.

Are the countries at the bottom worse off than those at the top? It is true that Germany is currently doing very well, in part because its manufacturers of cars and machinery are benefiting from booming demand in China. But it is hard to argue that the Italian economy, despite its relatively large commitment to manufacturing, is performing better than that of Britain or France, and the same is true of Japan. The prosperity of a country does not depend on the size of its manufacturing sector. What matters most is productivity growth in the economy as a whole, and that depends at least as much on the efficiency and progressiveness of the service sector as on manufacturing.

Could it be, nevertheless, that if a country allows its manufacturing sector to decline below a certain level it will be unable to generate the increase in living standards that its citizens expect, or to pay its way in the world? The problems with this argument are, first, the difficulty of defining what the minimum level should be, and, second, the difficulty of designing effective policies to arrest the decline. Among European countries France is probably the one which is most worried about "deindustrialisation". In recent years the French government has introduced a number of pro-manufacturing policies, including the creation of some 70 "clusters" aimed at fostering the growth of high-technology businesses on the Silicon Valley model. France has also been much more protective than Britain of large, nationally owned companies in what are regarded as strategic industries; one example was the rescue of Alstom, a manufacturer of trains and power-station equipment, in 2004. There is no evidence that these measures have improved the performance of the French economy.

Past experience in Europe suggests that attempts by governments to alter the structure of their economies by favouring one sector over another generally cause more problems than they solve. The effect in many cases has been to preserve uncompetitive businesses, often at great cost to the taxpayer, and to slow down the redeployment of resources into areas where they can be put to

better use.

The need for such redeployment has become more pressing as a result of changes in the international division of labour. The shift of manufacturing to China and other emerging countries has forced companies in high-wage countries, especially those operating in medium-technology industries, to look for niches in their markets where they can still compete profitably on an international basis. Some of them have become more service providers than manufacturers—the required skills may be different but that does not make their contribution any less valuable. The distinction between goods and services is in any case becoming increasingly blurred.

Countries should specialise in what they are best at. One of the weaknesses in British industrial policy in the 1960s and 1970s was the reluctance to accept that Britain could not expect to compete against America in all the major high-technology industries; for example, a great deal of effort was wasted in trying to create a national champion in computers that could hold its own against IBM. Similarly, today many people envy Germany's manufacturing strength and look for ways of emulating it. But for a mixture of historical and institutional reasons Britain's competitive advantage lies in different areas, some of which are outside manufacturing—financial services, business and professional services, creative industries and the like.

This is not to say that the British government should take no interest in manufacturing. It is good that Britain has a strong pharmaceutical industry, and the government is right to be concerned about how that position can be maintained. It is good that BMW and Nissan continue to find the UK an attractive place in which to make cars. It is reasonable, too, that the government should look for ways of strengthening the links between universities and business in science and technology. The beneficiaries of such policies may well be service- or design-based rather than manufacturers (ARM, a semiconductor company, is a notable example), and there is nothing wrong with that. There are plenty of things the government can do to improve the supply side of the economy, but trying to alter the balance between manufacturing and services is not one of them.

## Closing statements

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The moderator's closing remarks  
Jul 6th 2011 | [Patrick Lane](#) 

We are now in the final stage of our debate on manufacturing. Both our main speakers have made their closing remarks. We have also had a fine guest contribution from Sir Geoffrey Owen.

As a matter of definition, this debate has centred on the sources of productivity growth: economies succeed by becoming more productive. To become more productive—rather, to become more productive more rapidly—do economies need a big manufacturing base? Ha-Joon Chang argues that productivity growth is faster in manufacturing, so that a smaller manufacturing sector will mean slower growth. Jagdish Bhagwati points to the conceptual problems that arise at the border between manufacturing and services: thanks to what he calls "splintering", deindustrialisation can be more apparent than real.

Discussions of productivity growth naturally focus on technological change. Is it chiefly a phenomenon of manufacturing, or can services be a powerful engine of technological advance too, and hence of productivity growth? Mr Bhagwati has pointed to retailing and medical services as industries blessed by modern technology. Mr Chang responds that e-commerce accounts for only a small share of retailing. He also questions the importance of medical tourism as a source of foreign-exchange earnings.

Finally, thank you to all those who have pitched in from the floor. There have been plenty of thoughtful and provocative comments. Occasionally, someone has sought to dismiss the motion in a sentence, or to back one side without reading what the other has written. The vast majority, though, have read, pondered and engaged with the arguments. Please continue to do so. I hope you enjoy the last stage of the debate.



The proposer's closing remarks  
Jul 6th 2011 | [Ha-Joon Chang](#) 

Jagdish Bhagwati's statements show how his arguments lack solid theoretical and empirical bases.

In his rebuttal, Mr Bhagwati claims that it is growth that is driving the expansion of manufacturing, rather than the other way around, arguing that higher income creates consumption and production "biases" towards manufactures.

But where does this higher income come from in the first place? It has ultimately to come from productivity growth, which is faster in manufacturing, so a weaker manufacturing base means slower growth. Moreover, without faster productivity growth in manufacturing, which he keeps denying, the two "biases" in Mr Bhagwati's model will lead to an indefinite expansion of manufacturing, which is patently not what has happened.

Mr Bhagwati also criticises me for arguing that the quality of producer services cannot be maintained in the long run without a manufacturing base, gibing that marmalade-producing countries need not grow oranges.

He is right about marmalade. But when it comes to higher-end manufacturing (main clients of producer services), which involves a lot of what Friedrich von Hayek called "tacit knowledge", there is a vast literature, including the classics by Nathan Rosenberg, showing how geographical proximity, shared traditions and continued interactions between different stakeholders are critical in learning and innovation.

In addition to these and other theoretical weaknesses, Mr Bhagwati's arguments suffer from poor empirical bases.

From the way he is talking, one would think that service trade is about to become dominant, if it has not already become so, but the share of services in international trade has been firmly stuck at around 19% since the early 1990s, despite two decades of supposed "service revolution". Service trade may have grown enormously, but so has manufacturing trade.

Mr Bhagwati suggests that countries like India can become rich on the basis of services because a lot of services are dynamic today. But is this realistic?

The fact is that, even if India develops its economy with the smallest possible manufacturing sector, it still has to massively increase its manufacturing output. Australia has by far the smallest manufacturing sector (measured by per-head MVA, or manufacturing value added) among those of today's rich countries, thanks to its exceptional natural resources endowments, and even the next smallest ones are more than one-third larger than Australia's. Even if India can somehow emulate Australia in this regard, despite its poor natural resources endowments, it still has to increase its per-head MVA by 30 times (from \$82 to \$2,522).

Manufacturing development of this scale is impossible without a huge amount of imports of machines and intermediate inputs, given India's technological backwardness. And how is India going to pay for such imports?

Mr Bhagwati's answer would be "through service exports", but this is not going to happen. Between 2004 (until then India had a deficit in service trade) and 2009, India recorded a service trade surplus equivalent to 0.9% of GDP, which covered only 19% of its manufacturing trade deficit (4.8% of GDP). This means that, unless it increases its service trade surplus fivefold (an implausible scenario, given that its service trade surplus has not even been on a firm rising trend), India cannot maintain its current pace of economic development without a serious balance-of-payments problem.

A flimsy basis in reality is also evident in Mr Bhagwati's view on e-commerce. He argues that my questioning of retail productivity growth figures on account of quality dilution may be true but "way behind the curve", given the rise of e-commerce. But does he know that the US Census Bureau estimates e-commerce to be a mere 4% of retail sales?

A likely response to this is that e-commerce, growing fast, will soon become the dominant form of retail trade (hence the talk of "the curve"). Unfortunately, the fact that something has grown fast does not mean that it will continue to do so. According to a widely cited estimate by Forrester Research, a market research group, e-commerce is estimated to "plateau at around 10% of total US retail sales over the coming decades"—and this projection started from the estimate that e-commerce is already around 7% of American retail trade.

The same linear thinking is evident in Mr Bhagwati's view on medical tourism. Medical tourism has recently grown fast, but health experts agree that there is a clear limit to its growth, given the importance of continuous after-care and the need for close patient-doctor interactions. Routine treatments that require a short one-shot hospital stay and minimum after-care, such as cataract operations, may have scope for large growth through health tourism, but most health services are not like that.

The discourse on post-industrial economy has become one of the greatest myths of our time. It is based on poor theories, superficial evidence and unwarranted extrapolations. Its policy recommendations are at best unrealistic and at worst misleading, especially for developing countries. It is time that we dispensed with this dangerous myth.



The opposition's closing remarks

Jul 6th 2011 | [Jagdish Bhagwati](#) 

Let me first respond to Ha-Joon Chang's frivolous sallies aimed at throwing mud in the reader's eye to gain debating advantage and then to the substantive points at issue between us.

Mr Chang considers my historical review of the recurrence of the manufactures fetish as a resurrection of "ghosts from the past". He forgets that these are Holy Ghosts, not like the one in "Hamlet". Nicholas Kaldor (to whom I will return) was indeed a world-class economist. And he forgets that I also mention Adam Smith as the originator of the manufactures fetish. Even if Mr Chang lacks intellectual curiosity, has he forgotten Keynes's reminder that we are often prisoners of dead economists?

Then again, Mr Chang thinks that my remark about Kaldor having almost certainly been influenced by the impression formed by the mom-and-pop retail stores outside Oxbridge Colleges ("a sleepy university town" in Mr Chang's view, but not mine) to be "highly implausible and deeply insulting" and that he was "a careful applied economist" and did not rely on "casual empiricism". Yes, Isaac Newton was indulging in "casual empiricism" when he saw the falling apple and went on to formulate the Law of Gravity. Kaldor came up with interesting ideas, both valid and invalid, from casual empiricism, and these ideas prompted other economists to do the "selective empiricism" that must follow: without the brilliant ideas of great economists like Kaldor, there would be little empirical work of value done. As for his being a "careful applied economist", this must come as news to his many students, not just me, who studied theory with him at Cambridge in 1954-56 and never saw him as a number-cruncher or even as an astute student of political economy which must influence what one recommends to client governments. The arguments that he produced for the expenditure tax in India were theoretically brilliant but had little political salience. So were his arguments for a land tax in Turkey based on potential output (reflecting potential increase in productivity from adopting better methods); but Kaldor's charisma was such that three leading economists from the State Planning Organisation (Devlet Planlama Teskilati) resigned because his suggestion was rejected by the prime minister, Ismet İnönü, who could not possibly get such a tax enacted. In any event, though he works now in Cambridge, Mr Chang does not appreciate that the rank-ordering in academic distinction in Oxbridge goes from theory to applied work; the notion that I am insulting Kaldor by saying he drew on casual empiricism to produce his brilliant ideas and theories is banal.

Enough, however, of joining the debate with Mr Chang's inconsequential follies. He makes a number of analytical mistakes; let me take up some key ones.

First, he takes me to task over my example of the comparison between potato chips and semiconductor chips and that the technological level of the two manufactures were the opposite of the rhetoric. Mr Chang caustically denounces me for "casual empiricism". He is wrong, both on this description of what I did, and his assertion that I have made an analytical mistake. What I have done here is to use anecdotal evidence. As every successful writer knows, technical ideas get lost unless accompanied by anecdotes and witticisms which illustrate but are not used as a substitute for scholarly argumentation. Having done both scientific and popular writing, I also

appreciate Bertrand Russell's observation that, unless one has written things which few can understand, one cannot successfully write things which many can.

But Mr Chang's substantive critique is plain wrong. He says that behind the "final" stage of making semiconductor chips there is a lot of fabrication, which I ignore. But behind the Pringles manufacture, there is the fabrication of the automated assembly line as well. If you want to get to the entire product chain, you cannot do this for one item and not the other. And that is the crux of the matter, illustrated precisely by the anecdotal comparison only of the last stages of manufacture.

Then Mr Chang seems to be unaware of the conceptual problems that make comparisons, across countries and indeed over time, of manufacturing and services difficult. As I noted almost two decades ago, services often are a result of what I called a "splintering process". Imagine a car being produced on an assembly line. It is painted by an in-house crew, so that the value added by the painters is part of manufacturing value added. But suppose that, as painting jobs multiply, painters move out of the factories and set up "painting services" establishments. Suddenly, the painting value added becomes now "services" value added and the manufacturing value added declines, though little of substance has changed. The "deindustrialisation" that is measured is then a statistical artefact.

One final correction is warranted. When Mr Chang says that "having seen financial services implode, Mr Bhagwati is now trying to advance his pro-service line by arguing for non-financial services", I must remind readers that I am known worldwide for having cautioned after the East Asian crisis that the case for free capital flows is not symmetric with the case for free trade (a position now embraced by the IMF after earlier denials). But suggesting that financial services are necessarily unproductive or counterproductive is surely wrong.