

The production of information about capital in national accounts: Industrial malaise or efficiency changes?

Andrew Philpott Morgan

This article has two objectives. First, to look critically at the production of information about capital and to argue that the main problems of assessment are not primarily the result of technical difficulties, but rather a product of a socio-economic system. Second, in this context, to discuss a paper being prepared for the government which will claim that capital investment in machinery & equipment, the backbone of industrial growth and development, is not as poor as it appears to be owing to efficiency changes. It argues that capital is more productive than in the past, costs less and that there have been large gains from more flexible and better trained 'human capital'. This research is supported by the competitiveness unit of the Office of Public Service under Michael Heseltine. Nevertheless, the interpretation has support from the Bank of England and from several right-wing economists such as Patrick Minford.

An alternative approach

How are we to understand how things fit together, what do we focus on? We either believe the situation is disparate, or there are at least degrees of systematisation in place. Understanding involves putting these together through a process of abstraction to find primary aspects which are later qualified by secondary influences. If we do have a system what are the primary components? There are three: agency, relationships and environmental context. Many approaches focus on the latter two resulting in useful, yet limited passive analyses, which miss much of the essence of a situation.¹ For it is agency which needs to be the starting point as it is responsible for activity by operating through a set of relationships which determine goals, objectives, the 'good' and 'bad' and their trade-offs given the character and state of the environment at a particular time. A formal/informal model of these imperatives then underlies the relationships and the environmental context. The concepts derived reflect these goals and the

¹ Mainstream statistical inference utilises the frequentist, sampling theory, approach which focuses on the passive analysis of data and finds it hard to satisfactorily cope with a formal model of interests. The alternative Bayesian approach enables this to be done through utility models, although its significance is not appreciated by radical statisticians. See the discussion in (Evans, Irvine, Miles, 1979).

vested interests which are pursued; the data series generated likewise reflect these socio-economic priorities which largely explain why certain information is required.

What information is required depends on who requires it: the party in office, the state administration, which faction of the corporate sector or the labour movement. The primary power centre is wielded by those at the top of society who attempt to use their influence to run things in their interest, and information is constructed with this in mind.

It is essential to focus on the interests of groups in assessment, to integrate interests (decisions) and information (inferences). The party in office has a very strong interest in remaining there, and does not like those areas which take away votes such as poverty and unemployment, and might, on a narrow view, like to see such information disappear. Close to elections it will pursue economic policies to make things look better, although it is aware that after an election counter-policies may become necessary to correct the damage done. This may be contrasted with the state administration which has the wider task of regulating economy and society to whom such information may be invaluable. Indeed, unemployment and poverty may be grim from the point of view of those affected, but governments pursue deliberate policies to hold down labour costs and therefore to maintain profit levels. Indeed, the ultimate aim of business is to maximise profit, and in this government concurs as the profit motive sets the terms of reference for the socio-economic system and the imperatives behind national accounts.

Moreover, while both companies and the state do have an interest in accurate information regarding the state of the environment through which profit can be made, companies individually have a vested interest in being selective about the kind of information they are prepared to reveal about themselves. This micro/macro conflict underlies many socio-economic limitations faced by those who construct national accounts.

Official statisticians are well aware of this despite the few hints that the collection of statistics is little more than an automatic mechanism in official accounts. Subsequently they intervene, evaluate and guess about the real situation to the extent that they can. Statisticians as workers have to follow the directives which have been handed down by the policy divisions and senior management and are required to fill in the detail to make the information production system operational.

Many of the methods used consist of 'tape and paste' techniques as the information necessary cannot be extracted easily. The resulting 'hard' information does not have the status often given to it, yet is necessary to reject the views of those who see it as useless. It is certainly a social product, but one which has a basis in reality conditioned by the objectives underlying it and has to be used understanding this.

The production of information

Information is produced in the context of a socio-economic system, capitalism, whose drives set the priorities perceived appropriate for its satisfactory functioning. The concepts derived reflect the central interests of those who control its institutions and are attempting to organise the environment in their interests. This is the context in which to understand the construction of concepts, their operational proxies and the sources and methods employed.

1. Concepts

i. Gross and net estimates

The primary framework for capital concepts, sources and methods has been developed over a number of years (Redfern, 1955; Dean, 1964; Feinstein, 1965) and the official account is provided in *Sources & Methods* (CSO, 1985). Capital consists of tangible, physical, fixed assets which provide a service beyond the period of account within which they are bought such as buildings, machinery and equipment. The central concept *gross domestic fixed capital formation* (GDFCF) treats the investment as new until it is retired, nothing being deducted for wear & tear, obsolescence or damage, it is assumed that there is no decline in use value. It is generally taken as a measure of potential use. It includes not only business assets, but all direct costs such as those involving transport or legal matters, and moreover all expenditure on dwellings whether by individuals or companies. Therefore, as a measure of productive potential it is an imperfect indicator and more so if technological change is rapid.

Any further expenditures add to capital if they involve improvements, but not if they are repairs which retain capital in its original state. The distinction is notoriously difficult to draw, in practice as expenditures may be both. Moreover, repairs are frequently placed in company capital accounts as they have tax reasons for doing so.

The recording of capital is based, in principle, on when it becomes available for use, yet in practice payments are used although many items lead or lag this proxy, and worse, in the case of energy and transportation, assessments are made consistent with balance of payments statistics. There are good reasons for doing this, but it also generates conceptual knots to untie.

Corresponding to this gross concept is a *net* concept which assumes that a fixed amount is deducted each year for depreciation spread equally over the life of capital. The net concepts are more appropriate in costing and financial assessments and the 'real world' basis for socio-economic regulation. Use has little to

do with the aim of production. The life of categories of capital are based on crude assumptions and guesswork as there is no hard information. Indeed, there is a sharp divergence between company accounts and national accounts. For companies what matters is the original outlay at historic costs, not as presented in national accounts which attempts to estimate in current prices. Official statisticians regard company accountants as 'prudent' and approximately double the lives of capital assets in company accounts before they are used in national accounts. However, the lower the asset-lives and the higher depreciation is claimed to be, the lower is the tax bill. Nevertheless, while companies exaggerate, asset lives in national accounts are unrealistically high which presents a rosy picture of profit, profitability and the net capital stock which is damaging for assessments. The lives of capital assets are also assumed to be constant, despite it being evident that the competitive system results in a trend of shortening asset lives.

The treatment of capital poses two sets of related problems for national accounts. First, the historical costs of capital need to be re-evaluated in current prices. This is not a problem for most commodities as sales are in current prices and the difficulty only arises when an assessment is made in volume terms at some base constant price. However, the problem is how to estimate the current prices of many items which are no longer on sale. Through the competitive process products constantly change, incorporate newer technology better specifications and more is provided for lower prices. But what would they be worth now is the dilemma. The re-evaluation in constant prices is an additional problem as the relevant deflators may not be available. Indeed, it is not unusual to use a general sector deflator for a specific product group however misleading this may be.

ii. The myth of 'national' accounts

A central difficulty in the national accounts is the notion of 'domestic' which might once be taken to mean 'British' with a few exceptions. National accounts contrast 'domestic' with 'national' which is supposed to reflect territory. Both notions have little meaning beyond simple accountancy measures. Indeed, the national accounts focus on territory can be seriously misleading: a bit like looking at one cog in a machine and attempting to explain it in its own terms missing its connection to, and dependence on, other parts of a system. The system which has rapidly evolved since the 1950s has seen a transition between the relatively autonomous set of national economies which were dependent primarily on trade to an integrating global productive and financial system *sui generis*. The emerging structure began to acquire two qualitative features. First, the scale of operations meant that for many sectors the scale of production-runs presupposed a world market in excess of particular national markets as a condition of their

existence. This was particularly the case in highly specialised groups. Second, the fundamental aspect of globalisation was that process was not replicated independently across countries, but part of a functionally continuous and integrated process which weaves its way *through* countries. (Harris, 1993). A significant proportion of trade is no longer trade proper but intra-firm trade, spatially separate aspects of a *production process* between parent and subsidiary companies (UNCTC, 1979, 1983). The national accounts do not distinguish it from trade in general and by presentation tends to retain the myth of an autonomous 'national' economy. Yet, for example, by 1990, 'foreign' companies accounted for 13.9% of employment, 18.3% of net output, 19.1% of stocks and 21.2% of net capital in 'British' manufacturing (*Census of Production, 1990*). Part of the costly influx of imports flowed from 'British' companies abroad, a sizeable domestic product produced on British soil was produced by 'foreign' companies and likewise a fair chunk of export earnings come from 'foreign' companies at 'home'! Indeed, there is an associated problem as one cannot tell where many products are from or the national origin of particular companies. Moreover, state owned companies form 'private' companies home and abroad, and 'foreign' companies place investments with public companies here, leaving the private/public status vague too.

There has been an exaggerated view, particularly associated with the right, that the world had become a corporate society with powerless states which has been recently countered in the press and the academic world. This should be welcomed, regrettably the alternative is seen as the old vision with some qualifications. In some cases this has moved back to the absurd suggestion that virtually nothing has changed (Wolf, 1996; Hirst & Thompson, 1996), comparing trade or capital flows. Others by focusing on the size of state expenditure or the extent of multinational dependence on particular 'home' states, provide an unsatisfactory national perspective (Economist, 1995; Harman, 1991). The main problem with this perspective is that it fails to satisfactorily integrate the global characteristics of state and capital.

The genesis and the framework for globalisation has come through the active intervention of the states and is explained through their mutual competition, to attempt to root companies on to their soil. This is an urgent task as industrial change is invariably associated with geographical re-location and the next round may see parts of the industrial base vanish along with its workforce, export earnings—inducing exchange-rate, balance of payments problems and government debt. In this process the state was transformed, acquired active agency status with a global orientation and began adapting policies to meet these new imperatives. States became involved in economic competition with other states and corporate actors. The size of state expenditure grew to attempt to prop up business and facilitate its new status as a global actor. The policy of privatisation in the 1980s was largely a strategy to rationalise operations as the role of state

expenditure did not generally diminish. States through their central banks speculated in the world currency markets, functioning as a financial capital to attempt to facilitate their national economies adding to an increasingly unstable world. The state being sucked into this process took on a strategic role holding a few of the cards instead of most of the pack: it was the most powerful influence on domestic matters, but this involved a change of status. It could neither control the money supply nor demand, planning whether its Keynesian or 'socialist' version became the internal process of regulation moulded by competition which flowed through domestic territory.

2. Sources

If the formulation of concepts is heavily influenced by the imperatives of the vested interests in society, the sources of information are subject to concealment and distortion on a large scale. Companies wish to present an optimistic view to banks and investors, and a contrasting view to Inland Revenue as they attempted to minimise their tax bills. In this they have accountants to find legal loopholes and operate through company lawyers in the grey areas between the legal and illegal. Terry Smith was sacked from UBS Phillips & Drew for publishing a book illustrating how a long list of major companies 'misrepresented and falsified' their accounts, quite legally (Smith, 1992). Indeed, there have been a series of studies on tax evasion which have showed that major companies have paid little or no tax (Kaye J & King M, 1978) the shortfall being met by the working population. This is primarily explained by the priorities of the system, but globalisation has added a further dimension to this process as governments are under additional pressure to reduce taxation formally or informally as a means of attracting companies to their soil.

3. Methods

The various techniques utilised to make estimates are driven by the context and limited by the incompleteness, validity and reliability of the sources. The main method in national accounts is to estimate capital from expenditure, through purchases of capital goods which provide a cost profile which has the shortcoming of being highly aggregate. Capital can be identified, but the precise composition remains unclear. So this is supplemented by the detailed breakdown provided through commodity input-output tables. But the latter frequently cannot distinguish between capital, intermediate and consumer goods. Once again the difficulty is that information cannot be obtained from the companies in the detail required to enable a full set of accounts. The result, as official accounts concede, is a large degree of guesswork, assumptions about the situation and decisions which make more or less dubious assumptions about how the system works.

What has been happening to investment?

The issues

It is evident that research is being conducted to attempt to counter the view that investment has been particularly weak in the UK over the last couple of decades. Clearly a simple response to this would be: why is it Britain which is having these problems? Despite these problems other economies seem to have more buoyant investment behaviour? (But all are weaker than the past)

Nevertheless, to consider the case: if capital is more productive, perhaps less is needed? If it is cheaper similar or higher volumes will show up in national as lower volumes? Moreover, if the workforce is more 'flexible' (prepared to work harder, longer, in poorer conditions) or better trained and more productive, then could these productivity gains mean that less productive investment is necessary?

Pricing problems

Capital is hard to measure as has been indicated earlier. Information is lacking and even when it is available recalculating historic in current prices let alone constant prices presents major difficulties. Yet it is clear that capital is getting cheaper and it is clear that the national accounts underestimate this. If prices are falling then the estimates in national accounts will make current additions lower in volume terms than they would have been if it were possible to construct a 'true' deflator for comparing like with like.

The productiveness & cheapening of capital

It is the case that capital, through innovations, tends to be more productive than in the past. But it is not the case that because capital is more productive, less is needed than in the past. It must be remembered that what is important is not just how productive a particular company is, but how productive competitors are. Being more productive, but not productive enough could lead to a loss in market share and poorer profits. Indeed, while an assessment and analysis of growth and decline in volume terms is useful, this needs to be translated into monetary values to see how this affects profitability and related influences.

Each round of investment tends to see a decline in costs which means that it is cheaper to invest in current capital. However, the relative cost of depreciation has increased as the obsolescent or written-off capital stock is dominated by historic prices. Depreciation costs are deducted directly from profits lowering

them and available future funds and represents a considerable burden which could outweigh benefits from cheaper current capital.

Indeed, there is another side to this dilemma: if the lives of assets have declined, even if capital costs are lower, competition means that companies are induced to invest *more frequently* than in the past. One can question whether the total outlay would decrease at all.

These issues have some significance for the rate of return (rate of profit) on investment (Freeman, A.; Cockshott et al). This is the ratio of net profit to total investment which is crucial to companies in assessing whether investment is likely to secure future profits at a sufficient level. Other things being equal (as will be seen below), weak investment is usually followed by weaker profits and the process is cumulative. The ratio is not indeterminate as has been suggested (Cockshott et al.). Net profit is reduced by the *current* level of depreciation which is dominated by historic values, but the impact of cheapening capital affects the ratio at a *future* point as this is made prior to current production. Rapid technological advance would result in an accelerating downward pressure on the rate of return rather than being a boost to it as is often assumed.

Why investment is weak

The official statistics provide a picture of weak investment performance not just over recent years, but over decades. In particular, manufacturing net investment for the decade of the 1980s was negative: the industrial base shrank as capital was written off faster than it was replaced. The correction to this picture is that on the one hand, additions are underestimated in real terms because capital is cheaper which would boost current investment figures, but as assets lives fell this would entail a pressure for more frequent investment to replace written off capital which would mean higher volumes of investment. The net result may be that we should still expect higher figures than those recorded *if* investment were buoyant. On the other hand, once we look at the net figures which are more important, depreciation is underestimated so net investment is substantially worse than the figures show, and with technological progress, depreciation follows a rising trend and this would be an important factor signalling industrial malaise.

A shift to 'human capital'?

More 'flexible' working was noticeably in operation in the 1980s, as large numbers of people became unemployed as work intensified for those who were employed and has continued into the 1990s. Productivity in manufacturing has been the great success story of the last decade. In the 1980s it rose by 4.5% per annum, on the back of a loss of two million jobs, but produced a snail's pace

annual output of 1.2%. This would be consistent with poor or very poor investment. It is certainly one way of boosting profits. This may be seen as an alternative to investing in plant and equipment, but it is a limited and short-term strategy. Given a production routine even with the removal of the 'surplus' workforce and the adoption of efficient/draconian training regimes, there are physical limits to how much can be squeezed out of a workforce, unlike plant and equipment which can, in principle, increase productivity without limit. Therefore, the two types of investment cannot be given the same status. It is, rather, a dangerous illusion, as, if capital investment is not being made the physical productivity gap is increasing. This argument masks the vested interests of a section of the domestic activity which is weak and believes its only alternative is to pay its workers very poor wages. These are particularly vocal in the grassroots of the Conservative Party pushing for no minimum wage, no ecu and no European integration. The argument is from a position of weakness rather than strength and reflects a minority position within those who control the domestic economy.

Selected references

- Blackaby, D. & Hunt, L., *The manufacturing productivity 'miracle': a sectoral analysis* in (Green, 1989)
- Cockshott, P., Cottrell, A., & Michaelson, *Testing Marx: Some new results from UK data*, *Capital & Class* 55, 1995
- Dean, G., *The stock of fixed capital in the United Kingdom in 1961*, J. Roy. Statist. Soc., Series A, 1964
- Dunne, P. (Ed.), *Quantitative Marxism*, Polity Press, 1991.
- Economist, October 7-13th, 1995, *The myth of the powerless state*, editorial and *Who's in the driving seat: a survey of world economy*.
- Evans, J et al., *Demystifying Social Statistics*, Pluto Press, 1979
- Feinstein, C., *Domestic capital formation in the United Kingdom, 1920-1963*, Cambridge University Press, 1965
- Freeman, A., *National accounts in value terms: the social wage and profit rate in Britain 1950-1986*, in (Dunne, 1991)
- Green, F., *The Restructuring of the UK Economy*, Harvester, 1989
- Harman, C., *The state and capitalism today*, *International Socialism* 51
- Harris, N., *Of Bread and Guns: The World Economy in Crisis*, Penguin 1983
- Hirst, P. & Thompson, G., *Globalization in Question*, Blackwell, 1996
- Kaye, J., King, M., *The British Tax System*, Oxford University Press, 1978
- Redfern, P., *Net investment in fixed assets in the United Kingdom 1938-1953*, J. Roy. Statist. Soc., Series A, 1955
- Smith, T., *Accounting for Growth*, Harvester, 1992
- United Kingdom National Accounts: *Sources and Methods*, Third Edition, HMSO, 1985
- Wolf, *The global economy myth*, *Financial Times*, February 13th 1996.