

# Economic Paradigms and Slow American Productivity Growth

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No problem is more central to the United States than that of slow productivity growth. International competitiveness and future standards of living, both absolutely and relative to those in the rest of the world, depend upon it.

In the United States productivity growth has gradually but persistently declined from 3.3 percent per year between 1948 and 1965 to 0.8 percent per year between 1978 and 1986. Nothing in the most recent data indicate a turn-around—the average growth rate in 1985 and 1986 was 0.8 percent per year.<sup>1</sup> After the first OPEC oil shock in 1973 productivity growth fell everywhere in the industrial world as attention was focused on saving energy rather than labor, but in the late 1970s and 1980s there has been a sharp rebound in the rest of the industrial world. In contrast within the United States the decline in productivity growth began earlier and still continues. Our major industrial competitors have productivity growth rates four to six times as high.<sup>2</sup> Whatever is happening is peculiar to America.

With low productivity plants closing under pressure from foreign competition productivity growth rates in manufacturing (2.7 percent from 1978 to 1986 versus 3.2 percent from 1947 to 1965) have not slipped as much as those for the entire economy but U.S. growth rates are far below those of its major manufacturing competitors and seem to be slowing based on the data for 1986.

From the point of view of growth accounting the decline in productivity growth is a major mystery. Labor productivity growth rates can decline because of a deterioration in the quality of labor itself or because of a deterioration in the quantities or qualities of physical capital, natural resources, and technology with which labor works, but analysts cannot find declines in the quantity or quality of any of these inputs large enough to explain the observed decline in the rate of growth of productivity.<sup>3</sup> Often inputs have in fact risen rather than fallen. Investment in plant and equipment, for example, has risen from 9.5 percent of the GNP between 1948 and 1965 to 11.5 percent of the GNP between 1978 and 1986.<sup>4</sup>

Those who go beyond an analysis of inputs to look at shifts in the industrial structure and industry specific problems similarly come up short. What must be explained is substantially larger than what can be explained.<sup>5</sup>

Often the analysts who have failed to find a rational economic explanation suggest that the unexplained slow down might be produced by non-economic behavioral factors such as a deterioration in the American work ethic.<sup>6</sup> There is little independent evidence to back up such an assertion, but if true it would mean that a non-economic set of behavioral models—sociological models that might explain why the work ethic has deteriorated—will have to be employed to understand why productivity has slowed.<sup>7</sup> The 'homo economicus' model doesn't work when it comes to explaining the central problem facing the American economy.

Even if conventional analysis could explain the decline in productivity growth, however, there still would be a problem. If a market system of individually rational choices lead to a decline in the quality or quantity of economic inputs, so be it. A deterioration in productivity

growth is like sex between consenting adults. It is nobody's business to remediate it even if it could be explained. From the perspective of free individual choice changes can only be recommended if it can be shown that the decline in inputs is caused by some market imperfection rather than by a process of free market choices. Thus to do anything about the productivity problem one would both have to show that the quantity or quality of inputs had declined and that the decline was 'irrational.' Yet since slow productivity growth implies a slow future growth in standards of living there is a 'social' interest in finding a cure even if the slowdown is produced by 'individually rational' processes.

The slowdown in productivity growth is a mystery, however, only if one accepts the blinders imposed by conventional micro economic behavioral hypotheses. The standard economic approach assumes that social institutions take care of themselves in the sense that economically efficient firms automatically drive inefficient firms out of the economy. Thus at every point in time the economy is mostly full of efficient firms. The same is true when it comes to the beliefs, habits, customs, and goals of firm managers. Managers cannot be systematically or persistently wrong. If they were, they would be inefficient and in a free market inefficient managers are systematically weeded out by efficient managers. Since economists theoretically know that nothing can be persistently wrong with organization or management, the possibilities lie uninvestigated.

To understand what is producing lower productivity growth one must put institutions and managers back into the analysis. History is littered with countries whose institutions could not change to meet new conditions or whose citizens would not change their beliefs and standard operating procedures to cope with new situations. In the long run of history it is certainly true that the efficient replace the inefficient but the inefficient often simply decline and only much later are they replaced by different more efficient systems. History also does not deny the possibility that the efficient firms and managers may all be foreigners while the inefficient are Americans. As history reveals there is no servomechanism that guarantees that a country will remain forever economically efficient.

#### *A Different Starting Point*

Leaving service workers aside consider the occupational structure of the American economy. In the period between 1978 and 1985 the number of blue collar workers on American payrolls was declining by 1.9 million or 6 percent while the real business GNP was rising by 16 percent.<sup>8</sup> If one produces 16 percent more with 6 percent less, one has had a 22 percent gain in productivity or an annual growth rate of 2.9 percent. When it comes to blue collar productivity America has a rate of growth close to its long run trend and not too far below that of the rest of the world.

Over the same time period, however, American firms were adding 10 million white collar workers to their payrolls. They represented a 21 percent increase in white collar employment. If one needs 21 percent more employees to produce a 16 percent gain in output, one has had a 5 percent fall in productivity. Since there were 58 million white collar workers and only 30 million blue collar workers on American payrolls in 1985 the decline in white collar productivity wiped out much of the gain in blue collar productivity. If one adds some of those service workers back into the analysis since many of them work for American industry rather than providing services directly to consumers, then rapidly rising white collar employment becomes even more central as a statistical explanation for declining productivity growth.

If the data showed that blue collar employment was falling faster than white collar

employment or that white collar employment was rising but less rapidly than blue collar employment was falling, there would be no problem explaining what was occurring. New technologies would be allowing white collar workers to substitute for blue collar workers (the white collar robot programmer replaces the blue collar welder) or improvements in knowledge such as better scheduling would be allowing the firm to operate with fewer blue collar workers yet require more white collar workers to generate the necessary information. New cost minimizing techniques are not being put in place, however, if it takes five new white collar workers to replace each old blue collar worker.

If the problem were a technological shift from blue collar to white collar workers, the same huge increases in white collar employment would also be occurring in other advanced industrial nations. They are not. White collar workers are not being added at a faster pace than blue collar workers are being fired in Europe. Studies of the relative cost of producing the Escort automobile in different countries show that 40 percent of the Japanese cost advantage is due to lower white collar overheads in Japan than in the United States.<sup>9</sup> When Japanese managers take over existing American enterprises they often dramatically reduce the number of white collar workers.<sup>10</sup> Too often they are reported to be getting higher productivity out of American workers than American managers.<sup>11</sup> If foreign managers find that they can manage American plants with many fewer white collar workers than American managers the problems cannot be traced to bureaucracy required by the American government or legal system.

This situation is even more puzzling if one remembers that the United States is supposed to be in the midst of an office revolution and that investments in office automation have accounted for a large fraction of total business investment in recent years. New technology, new hardware, new software, and new skills were all going into the American office, but negative productivity was coming out. Why?

Recently there has been a lot of talk in the business community about reducing white collar overheads in American industry and occasionally dramatic stories appear in the popular press about large numbers of white collar workers being laid-off. In the aggregate, however, white collar employment continues to grow faster than output. In 1985, the most recent year for which detailed statistics are now available, non-farm business output rose 3 percent yet the number of executives and managers on American payrolls rose by 5.6 percent and the number of what the Department of Labor now calls 'administrative support staff' rose by 3.5 percent.<sup>12</sup> Why should the number of executives have to rise almost twice as fast as output? Why is there a wide-spread recognition of the white collar problem but no action?

What America has then is not a general productivity problem but an office productivity problem. The American factory works; the American office does not. Why? A good question but one that is outside of traditional micro-economic analysis where firms and managers are assumed to be as efficient as it is possible to be.

#### *Missing Behavioral Variables*

If one seriously asks why office productivity is falling while investments in office productivity are rising, one has confront a set of factors that are left out of conventional economic analysis of the firm such as power (American bosses exist to boss), style (a good boss should know everything and in principle have the knowledge to make all decisions), institutions (most middle-level managers get paid based on the number of people who report to them), peer pressure (it is harder to fire those who directly work with you than those at a distance), and beliefs (if the system is based solely upon individual effort there is no need to pay attention to

group motivation, voluntary cooperation, or team work). None of these appear in 'the theory of the firm.' They simply aren't important when it comes to efficiency since even if they exist they are overwhelmed by the pressures for profit maximization and efficiency.

Beliefs about how one 'should' operate, however, are important since they condition what we do. Consider the conventional medical rule—do no harm—for when to stop treatments. If every treatment is carried to the point where negative side effects start to be worse than the original disease, doctors prescribe treatments far beyond the rational stopping rule (marginal costs equal marginal benefits) and run up huge costs in situations where little benefit is to be expected—more than one-third of all U.S. medical costs are incurred in the last year of life. Employing every available procedure up to the point where it actively starts to harm the patient did not cost very much as long as there aren't very many expensive technologies to be employed in most illnesses, but when such technologies arise and present doctors and their patients with a lot of expensive technologies with sub-marginal payoffs, the old stopping rule can become a very expensive stopping rule with which society cannot afford to live. Yet thus far America has been unable or unwilling to change its standard operating procedures in medicine.

What is true in medicine is no less true in business. In business the equivalent of 'do not harm' is 'know everything' and in principle be knowledgeable enough to make every decision. As long as the technology does not exist to implement that rule, it isn't very harmful. But when a technology comes along that makes it possible to attempt to know everything that rule becomes very expensive and can lead to an excessively large number of white collar workers to keep the information system rolling.

Role models of what we 'ought' to do are important in determining the behavior of not just children who want to become basketball players but adults who want to become executives. Take the proposition that the best boss is the boss that has the most knowledge and can intelligently make the most decisions per day. In the late 1960s and early 1970s the business press set up bosses such as Harold Geneen of ITT as role models for others to emulate. He was the "world's greatest business manager."<sup>13</sup> It was a "managerial system of tight control"<sup>14</sup> with "elements of a spy system."<sup>15</sup> He "worked extraordinarily long hours and absorbed thousands of details about ITT's businesses."<sup>16</sup> "Tales of Geneen's incredible stamina at these marathon affairs (affairs where he demonstrated that he knew more about their numbers than middle level bosses knew about their numbers) and of his brutality to any manager who dared to dissemble before him are retold today like epic poems."<sup>17</sup> "Everything the company does is totally number orientated."<sup>18</sup> "His unique form of management allows him finger tip control over his vast empire."<sup>19</sup> He was "An ogre in a business suit? The greatest corporate manager of his time? An unimaginative numbers grubber? A great leader of Men?"<sup>20</sup> 'Management by the Numbers' became the way management was supposed to be done.

Geneen and managers like him supposedly knew more about middle-level management's job than the middle-level managers themselves knew and they were famous for making thousands of rapid decisions. He was the proto-typical boss who bossed. He was the macho manager whom lesser managers should attempt to emulate. When Fortune magazine periodically gave accolades to the toughest bosses in America, he was regularly on the list. He knew the numbers but knew nothing directly about the people or operations he was managing.

Such beliefs about the ideal boss may have long existed, but most managers could not implement them without the technological office revolution that is now under way. Previously firms had to decentralize and bosses had to defer decisions to those on the scene since there was no feasible way for them to know what they had to know to make good decisions. But with the onset of a new information technology and the office revolution bosses could implement that

desired style. A lot more information could be gotten much more rapidly. Bosses could do a lot more bossing just as doctors could give a lot more treatments.

To do so, however, one had to build up enormous information bureaucracies. Information could be gotten, but only at the cost of adding a lot of white collar workers. If there was an improvement in the quality of decision making from all of information which could now be moved up the corporate hierarchy, however, the positive effects on output were smaller than the huge number of extra information workers that had to be added to the system. Information was moved faster from place to place, but productivity fell.

The problem is graphically seen in accounting. The number of accountants on American payrolls rose 30 percent from 1.0 million to 1.3 million as output was rising 16 percent from 1978 to 1985.<sup>21</sup> Computers made accounting more efficient but that efficiency was not used to reduce the employment of accountants but to increase the frequency and types of accounting. Old accounts that in the past were calculated every three months were now ordered up every day. Whole systems of new accounts (management information systems, cost accounting, inventory control, financial accounting, etc.) that were previously impossible to calculate were invented and implemented. Yet there was no evidence that all of these new accounts with their increased frequency improved decision making enough to justify their cost. In fact given the huge increases in white collar employment required to generate all of this new information there was clear evidence to the contrary. But power and style called for ordering up all of those new accounts and it was done.

The economy is rife with similar examples. Banking has enjoyed not just a computer revolution in accounting but a robot revolution (ATMs) in dealing with its customers yet its employment has gone up faster than its real output and its productivity has fallen.<sup>22</sup>

The institutional reasons for such an outcome are not hard to find. The ideal is perfect knowledge. No rational man is deliberately ignorant. To improve performance one must improve knowledge. Locally to the boss information also seems to be a free good. Bosses order it from subordinates and the cost of acquiring it appears on the budgets of the subordinates. Subordinates in turn neither can refuse to provide it nor are in a position to know whether it is worth the costs of acquisition. Costs are irrelevant and not even calculated since one must do what one's boss orders. Both boss and subordinate are imprisoned in standard operating procedures that create an institutional set of blinders.

While those with efficient stopping rules will eventually drive those with inefficient stopping rules out of business, the efficient firms need not be American firms and driving the inefficient out of business may take a long time. Despite intense competitive pressure from foreign firms with lower white collar overheads, American firms, as we have seen, are still adding white collar overheads much faster than they are adding output. Beliefs about the 'right' style change very slowly and only under great duress.

Factors of power emerge since to do away with those white collar workers and the information system they support is to delegate one's decision making powers to those on the spot who have the necessary information without the benefit of an information system. To do so is to become a boss who does less bossing. But this is contrary to one's conception of one's own role. No one became a boss to do less bossing in America.

### *Management Techniques for Greater Efficiency*

Participatory management seems to be an efficient method to cut white collar overheads and raise productivity, but it requires a reduction in the boss's power. Just such a reduction in

power has led American managers to resist it even when it can be shown to be productive in plants such as in the Gains dog food plant in Topeka, Kansas. As Fortune magazine says in an article on 'The Revolt Against Working Smarter,' "the participative process doesn't always fit easily with traditional management methods and measurements." "Fearing a loss of power, many middle managers torpedoed early participative programs." "It is tempting for some of our managers to say, 'it's our turn; we've got the club'" "The higher up the corporate ladder, the tougher seems the shift to the participative mode." "Information is power and it remains a clear badge of rank with managers." "The skills required for would-be participative managers—communicating, motivating, championing ideas—are sandy intrusions in the gearbox of many traditional executives."<sup>23</sup>

In experiment after experiment with participatory management the problems have not been found among workers or in inefficient production, but among middle level managers who feel threatened.<sup>24</sup> They feel threatened and block experiments with new more efficient forms of production because they are threatened with loss of their job or authority. The personal dangers in the American system are not imaginary. They are real. Personal rationality intervenes to prevent system rationality from being achieved.

In contrast Japanese managers have moved more quickly to put decentralization and participatory management into the mainstream of efficiency enhancement precisely because they had other badges of rank and systems of power. Their status does not flow from knowing the numbers better than their subordinates. With lifetime employment greater efficiency does not lead to their unemployment.

Consider shop floor inventory control as it is done at the end of the shift in just-in-time inventory systems. While letting the assembly line workers do inventory control may increase the variety in the tasks performed by blue collar assembly line workers and may as a result increase their motivation to do a good job, the major efficiency gains are not to be found in enhanced motivation among blue collar workers but in the fact that their activity permits the complete elimination of a staff of white collar inventory control workers and the information system that is necessary to support that activity.

Efforts to allow shop floor employees to directly purchase equipment rather than using purchasing agents or industrial engineers has a similar payoff. Motivation may increase when workers want to prove that their purchasing decisions have been good purchasing decisions, but the real efficiency gains are to be found in reducing the number of purchasing agents or industrial engineers and their supporting staffs who used to be responsible for such investment decisions.

Traditionally American plants have had 'locked' numerically controlled machine tools while the Europeans and Japanese have 'unlocked' numerically controlled machine tools. The difference between locked and unlocked numerically controlled machine tools is whether blue collar workers are allowed to change the programming (unlocked) or whether only a group of white collar programmers is allowed to alter the programming. In the latter case the machines are locked to prevent blue collar workers from altering the system.

Efficiency seems to be all on the side of the unlocked machines. A large staff of white collar programmers does not have to be maintained, an information system does not have to be developed so that blue collar operators can tell white collar programmers that something has gone wrong, and down time is reduced since the program corrections can be instantly made without waiting for the white collar programmers to show up. But American firms have mostly opted for locked machines.

The issue seems to be one of power and control. With a locked machine management has more control and can set the pace of work. Locked numerical controlled machine tools were in fact sold as devices for capturing the initiative on the pace of work from assembly line workers and increasing management control. In the words of *Iron Age*, the trade journal of this field, "Workers and their unions have too much say in manufacturers' destiny, many metal working executives feel that large, sophisticated Flexible Manufacturing Systems can help wrest some of that control away from labor and put it back in the hands of management where it belongs."<sup>25</sup> If control is the issue locked machines dominate unlocked machines. If enhanced productivity is the issue, however, then it is equally clear that unlocked machines dominate locked ones.

In addition to the loss of power and control with shop floor inventory control, shop floor purchasing, and unlocked machine tools American managers face a direct reduction in their own salaries if they become efficient and reduce white collar overheads. What manager is going to make such a shift in functions when he and his peers get paid based on the number of workers that report to them? To take actions to make the firm more efficient is to reduce one's own salary. It is also going to reduce one's own promotion opportunities since a reduction in white collar employees will reduce the number of bosses necessary to manage the system. When faced with a current and future reduction in one's own prospects few are going to enthusiastically support any such shift in the standard operating procedures of American industry.

Consider word processors and the failure of office automation to yield the predicted gains in productivity. Not even in the companies that make office computers can anyone show hard data that using such machinery pays-off with higher productivity. The source of the failure is to be found in the interaction of a number of institutional realities.

As with shop floor inventory control or shop floor purchasing, management salaries are reduced when white collar employees are eliminated, but even more importantly to use office automation efficiently requires major changes in office sociology. The efficient way to use word processors is to eliminate secretaries or clerks and to require managers to type their own memos and call up their own files. But a personal secretary is an office badge of prestige and power. No one wants to give up that badge. To shift to the new technology also requires managers without good keyboard skills to go through a transition period where they will look clumsy and where they will get work done more slowly on the machines than when it was being done for them by others. Few American bosses can maintain their prestige, power, and self-respect while publically looking clumsy in front of their subordinates. As a result they will order the assembly line worker to shift from human to robot welding, but they will not order themselves to shift from human to computer typing and filing.

Those who might consider doing their own typing and filing face peer pressure not to upset standard office procedures and are reluctant to adopt a new technology that will require them to fire those who are physically close to them. If those below you can be fired, then you can be fired by those above you. No one likes to be reminded of that fact of life and as a result American industry is much more ruthless when it comes to eliminating blue collar workers than it is white collar workers. Almost every American firm has a vice president for factory productivity; almost no American firm has a vice president for office productivity. In the 1981-82 recession 90 percent of the firms who laid-off blue collar workers laid-off not one single white collar worker.<sup>26</sup>

A good illustration of the problem is found in the American armed forces. There are as many generals and admirals today with 2 million troops in uniform as there was in World War

II with 12 million troops in uniform. Why? The answer is simple. What general or admiral wants to reduce the opportunities to become a general or admiral? If existing generals reduce the number of middle level officers, there would automatically have to be cut-backs in the number of generals since the system could not let the number of generals and colonels get too far out of proportion. What is true in the American armed forces is no less true in American industry.

In Europe and Japan where management salaries are more seniority dependent (not so dependent upon 'merit' or the number of people reporting to them), keeping white collar overheads low is not seen as such a personal threat to one's own wages or prospects as it is in the United States. With lifetime employment in Japan and severe legal restrictions on firing workers in Europe it is also very difficult to fire blue collar workers while hiring white collar workers. 'Know everything' and give a lot of orders are not their management styles. Paradoxically the real threat of firing managers if efficiency rises ends up producing an American system with more managers than the European or Japanese system where there is little real danger of a manager being fired because of improvements in management efficiency.

The patterns of research and development in American firms differs from those in Japan and Europe by having less process R&D and by being cyclical (falling in recessions).<sup>27</sup> Neither is efficient. If R&D has a high payoff it should not be cancelled simply because a short recession is underway and if projects are not productive they should have been cancelled long before the recession began. New products and new processes both ultimately end up producing higher productivity but new process R&D is apt to have a bigger effect on productivity than new product R&D since all economies and most firms are heavily weighted toward old rather than new products. Ultimately new products become important, but new products are much easier to copy from the competition than new processes. One can buy a product and reverse engineer; one cannot buy a new process and see how it is made. As a result foreign firms that emphasize process R&D seem to be beating American firms that emphasize new product R&D yet American firms are very slow to shift their R&D budgets.

These structural differences, however, are not caused by American stupidity. They are endemic to the structure of our organizations. Cutting R&D spending is the easiest way to massage quarterly profits. To take advantage of new processes it is necessary to have organizations with flexible work rules where workers and managers are willing to shift from old to new technologies. If people were interchangeable parts, the view inherent in much of American management and in American economics, such shifts would present no special problems. But they aren't. Sociologically it is far easier to set up a new plant for a new product than it is to change production processes in old plants. In a system where people are paid for the skills they use at work and are fired when new workers with new skills are needed, new process technologies are threatening to the incomes and employment of both workers and managers. General unenthusiastic support (foot dragging) on everyone's part can quickly turn a profitable new process technology into an unprofitable one. Witness the much slower conversion to oxygen furnaces or continuous casting in the United States.

Standard operating procedures have a strong hold on the human mind. A Wang executive recently told me about an incident where they investigated why a Wang Taiwanese facility had much lower production costs than the same American facility even after one corrected for wage differences. They found that the differences were to be found in a lot of small standard operating procedures like the provision of telephones for every white collar worker. Most white

collar workers make very few business phone calls each day and could easily use a central phone bank, American blue collar workers are not provided with private phones, no one phone is terribly expensive, but when one adds up the costs of phones for thousands of white collar workers it becomes important. But phones are also part of the information system. Without a phone one isn't really hooked in. It is a symbol of being part of the white collar information system and taking phones away from white collar workers would be a traumatic affair. Replicate such factors a few times, however, and one is talking about a significant savings in inputs. But the savings aren't made because to do so would require a confrontation with standard operating procedures and one's view of one's self.

In an economy based on the principles that individuals operating alone are the engine of economic change and that the system will automatically produce whatever institutional changes are required to maintain efficiency, no one has to take responsibility for insuring that individual incentives do in fact lead to improvements in the social system's efficiency.

### *Suggested Measures To Enhance Productivity Growth*

Consider three frequently suggested changes for enhancing productivity growth—moving to the bonus system, replacing profit maximization with value added maximization, or delaying the management fast track. A true believer in conventional micro economic behavior models will tell you that none of the above could possibly enhance productivity growth. That conclusion is not something he has to investigate empirically, it is something he knows.

People are paid in accordance with their marginal productivity and how one writes the check, hourly, monthly, or partly in the form of a bonus keyed to some measure of performance, is irrelevant. Human workers only look at the bottom line—the total sum they are being paid—and aren't going to be affected by the institutional means whereby that sum is delivered to them.

Similarly a firm organized as a profit maximizer who hires and fires workers to maximize those profits has to be more efficient than a firm organized as a valued added maximizing partnership where the partners (workers and managers) aren't fired when sales decline as is the case in Japanese lifetime employment. When redundant labor is fired rather than retained, the system has to be more efficient since workers are more rapidly moved into the open labor market where supply and demand can reallocate them to new activities. Workers who quit for higher wages are moving to jobs with higher productivities. High labor force turnover is good—not bad.

Whether a firm quickly promotes what seems to be promising managers onto the fast track (the American pattern) or keeps managers working as a cohort with roughly the same pay and a rotation of jobs and doesn't start the fast track until managers are in their 40s (the Japanese pattern) should from the micro economic perspective favor the firm that earlier learns to take advantages of differences in talent.

Alternative behavioral paradigms lead to very different conclusions. If motivation, voluntary cooperation, and team work are real human elements in enhancing productivity, bonuses may lead to better performance than straight salaries. Maximizing teamwork may require organizational structures that are different from those that maximize individual effort.

If the high turnover of rapid hirings and firings lead to less morale, less willingness to sacrifice for the future common good of the company, and smaller investments in providing or

acquiring skills useful to the firm, value added maximizing firms may dominate profit maximizing firms. Homo economicus is not worried about unemployment and will not resist technical change to avoid it (he realizes that other jobs with equal wages are easily available in the open market), but actual human beings may fear unemployment and resist technical changes that threatens to throw them into unemployment. Firms with a labor force voluntarily willing to cooperate with technical change may have higher productivity growth than those without it.

If an early start to the fast track lowers the work effort of those not on the fast track more than it raises the work effort of those who have made it onto the fast track, an early fast track may be counter-productive. After all why should anyone work hard if it is already obvious that they don't have a chance to make it? If those on the fast track are so good, let them solve the firm's problems.

## CONCLUSION

What one believes makes a difference for both managers and economists. Both can have blinders that imprison them in low productivity modes of behavior or analysis. For the economist to drop real institutions and human managers out of the analysis is to make a mistake. For the manager to seek to 'know everything' is to be equally mistaken.

## FOOTNOTES

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