

INCENTIVES AND PLANNING IN CUBA

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During 1986 and 1987, Cuba found itself once again debating the relative merits of material and moral incentives. Analysts outside Cuba have rushed to their word processors to pronounce judgment on the Cuban economy's alleged uncertain footing. Some writers have erroneously declared that Cuba has abolished its post-1973 system of tying pay to productivity, and some have interpreted changes in the Cuban economic system as marking the failure and demise of the Sistema de Dirección y Planificación de la Economía (SDPE), Cuba's system of economic management and planning since 1976.¹ This essay will endeavor not to uncover the errant interpretations of Western observers but to explore the underlying problematic and dynamic that Cuba confronts in attempting to balance moral and material incentives within the framework of central planning.

The ideological imperative of limiting the importance of material incentives in a socialist economy is clear enough. Too much reliance on material incentives will eventually produce excessive inequality, unemployment, materialism, and selfishness—outcomes that are antagonistic to socialist goals.

Another imperative operating is the powerful economic imperative of circumscribing the operation of material incentives in socialist societies. The prevalence of shortages and the emphasis on physical indicators in centrally planned economies, where the price mechanism is suppressed, greatly reduce the effectiveness of material incentives. Centrally planned economies have four alternatives: first, to release central controls, thus allowing some scope for the price mechanism to operate and some private activities (the path taken by Hungary, China, and Gorbachev's USSR); second, to develop new, nonmaterial incentives, structures, and motivating forces (a largely uncharted territory, although experiments are underway in a number of centrally planned economies); third, to accept the status quo with its extensive allocational inefficiencies and waste, an increasingly untenable option as a centrally planned economy industrializes; or fourth, some combination of these three alternatives. I shall trace the development of Cuba's incentive system in order to elucidate the dynamic of central planning

and to throw some light on the prospects for reform of the Cuban economy.

Incentives may be divided into two basic categories: material incentives and nonmaterial incentives. Material incentives may take the form of wage and salary differentiation, piece-rate payments, bonuses for meeting certain goals, and profit sharing. They may apply to individuals as well as to groups of workers. In market economies, these material stimuli are generally complemented by the threat of unemployment, which provides a strong stimulus to a large share of the work force. Viewed dynamically, the possibilities of promotion or demotion with attendant income effects can also be considered material incentives.

Nonmaterial incentives can take several forms: coercion, moral incentives, or internal incentives. Coercion might consist of introducing military officers, military discipline, or both into factories, as occurred in the labor-conscription drive during the civil war in the Soviet Union (1918–1921) or, to a lesser degree, in Cuba in the late 1960s; or coercion might be indirect, such as threatening to transfer deviant workers or managers to undesirable areas. Moral incentives connote workers being motivated by a concept of goodness or the commonweal. The state often encourages moral incentives with a panoply of banners, awards, exhortations, perquisites, and other forms of public recognition. Experience has demonstrated, however, that most workers cannot be motivated by such abstractions for extended periods of time, except possibly during abnormal periods of war or perceived external threat. Yet it would be an overstatement to say that moral incentives accomplish nothing—they do work for some workers, sometimes. During normal periods, however, they do not function effectively alone, no matter how frequent or forceful the hortatory calls of the leadership.

Another form of nonmaterial stimulus can be called an *internal incentive*. I use this term to denote the workers' internalization of the goals of their work center or the economy. The best way to stimulate such internalization is to involve the workers in setting the goals of their work center or the economy. To the extent that the workers participate in setting the goals, they are more likely to consider those goals their own. Further, the more the workers control the conditions of their work (the work process, the division of labor, health and safety conditions, and similar aspects), the stronger the effect that results. This relationship should be readily perceivable by scholars who control their work environment (the classes they teach, the subjects and methods of their research) and receive pittance in monetary reward for greater "output." Their control over their work has engendered internalization of the goals of academe and intellectual inquiry.

An important, and I believe unresolved, question is to what de-

gree production workers can internalize norms and goals of their workplace. Abundant evidence points to the potential salutary effects of worker participation on productivity,² but it is unclear how long these effects can be sustained and how effective they can be in a planned economy. How extensive and meaningful can worker participation be in a centrally planned economy, where the autonomy of enterprises is tightly circumscribed under typical conditions and the perceived imperative of central coordination limits input from below in setting national priorities?

Since 1959 the Cuban government has experimented with different emphases and combinations of incentives. It is reasonable to say that Cuba has grown more sophisticated over time in applying both material and nonmaterial incentives. It is not clear, however, whether this sophistication has yielded much in the way of increased output.

THE 1960S

The unequal development of the Cuban economy prior to the Revolution created a markedly skewed distribution of wages. In 1958, whereas average monthly wages in sugar and nickel manufacturing were 120 pesos, in beer production, they were 273 pesos and in cigarette manufacturing, 359.³ At that time, straight time wages were being paid in 76.5 percent of Cuba's work centers, straight piece wages in 10.5 percent, time and piece wages were combined in 10.1 percent, and time and (nonpiece) bonuses were combined in the remaining 2.9 percent.⁴

The need to apply a uniform wage scale, based on consistent principles of wage formation, became apparent immediately. In 1961 a wage freeze was declared and the training of specialists in work organization was begun. By 1963 a new wage scale had been experimentally introduced in 283 work centers. It was gradually extended throughout the economy by 1966, and wage inequality was significantly compressed. Agricultural wages rose by an average 74 percent, while industrial wages rose 24 percent. The ratio of the top wage to the bottom wage on this scale (including all workers, technicians, managers, and planning bureaucrats) was 4.33 to 1. But it should be mentioned that in order to curtail the flight of skilled workers and not alienate others, a decision was made to allow workers who were receiving a wage above what the new scale stipulated to continue to earn the higher wage. This higher wage is referred to in Cuba as the "historical wage," and the difference between the two wages is referred to as *plus*. In 1965 some 70 percent of nonagricultural workers continued to receive a historical wage; by 1973 this proportion had been lowered to 25 percent, and by 1981 to an estimated 11 percent.⁵

The new wage scale was accompanied by a new system of piece

payments, and in agriculture and foreign trade (where enterprise self-financing had theoretically been introduced) by profit sharing as well.⁶ For every 1 percent of output above a worker's norm, his or her wage would rise by 0.5 percent (up to the next step on the wage scale). But the inaccuracy and out-of-date character of most of the applied norms impeded the effective operation of this intended incentive. A profit-sharing scheme was also developed in the self-financing sectors, although bonus payments were restricted to 5 percent of the enterprise wage fund. Prices, however, had been frozen, and profitability bore only a tenuous relationship to effort and efficiency. One Cuban expert concluded about the new piece-payment and bonus policy that "[i]n practice, this policy did not stimulate an increase in production or in labor productivity."⁷

Between 1963 and 1965, a debate over incentives and planning took place in Cuba, with two basic positions being propounded.⁸ Che Guevara argued for central planning, budgetary financing (all enterprise profits going to the state budget, all losses are covered by the budget), and moral incentives. Guevara maintained that moral incentives were necessary to create a new socialist consciousness, although he recognized that material incentives could not be abandoned all at once. He therefore urged that material incentives be collective (applied to groups of workers, not individual workers) and be limited in scope. According to Guevara, Cuba's low level of material development at the time meant that extensive use of material incentives, and the corresponding income differentiation, would begin to recreate the widespread poverty that had characterized prerevolutionary Cuba.

The other side of the debate was presented most cogently by Carlos Rafael Rodríguez, who favored central planning, enterprise self-financing, and material incentives. He argued that budgetary financing encouraged the wasteful use of resources by enterprises. Material incentives, he averred, were needed to motivate workers who were not ideologically ready for the communist principle of distribution, "from each according to his or her ability, to each according to his or her need." The issues of worker participation in enterprise decision making and popular participation in plan formulation were scarcely broached by either side.⁹

At the time of this debate, economic management consisted of a rudimentary, almost ad hoc system of central planning, a mixture of budgetary and enterprise financing and the incentive system already described. In 1966, however, things began to change. Guevara's policy prescriptions had won out (although Guevara himself had been out of office since 1965) and were implemented in extreme fashion. Piece payments and bonuses were ended. Budgetary finance was applied universally. Enterprises ceased to exist as separate economic entities and be-

came part of larger consolidated enterprises. The powers of JUCEPLAN (Junta Central de Planificación, the central planning board) were reduced, and formal one-year planning was abandoned. Such planning was replaced by Castro-inspired miniplans that gave priority to certain sectors (such as sugar) in order to assure them adequate resources. Nonprioritized sectors, however, fared poorly, and bottlenecks spread throughout the economy. The combination of bottlenecks and the high investment ratios of the late 1960s created serious shortages of consumer goods. Thus even if the leadership had wanted to, it would have been impossible to implement meaningfully a policy of material incentives. Workers could be paid more for producing more, but there was little to buy.

The late 1960s were a difficult time for the Cuban economy. Although a minority of workers responded to exhortations of sacrifice, overall absenteeism rose and productivity lagged. According to one estimate, unit labor costs rose by 12.7 percent between 1966 and 1970.¹⁰ In a sense, then, Cuba tried both material and moral incentives in the 1960s, and partly because of a lack of effective internal incentives, both failed.¹¹

THE 1970S

This decade began with the Cuban leadership recognizing the importance of its failure to develop worker involvement in decision making and its neglect of material incentives. Since 1970, and with varying intensity at different times, the leadership has sought to nurture worker participation and, up to April 1986, to promote the extension of material incentives.

One of the first and most important measures taken was to revitalize the unions, which had become passive instruments of state policy in the 1960s. More than twenty-six thousand new union locals were established, and new elections were called. Of the one hundred and eighteen thousand officials elected, 87 percent had never served in such posts. The unions became active in implementing the new policies of worker participation and in the setting of work norms.

Although new elementary work norms began to be set in 1970, the process proceeded very slowly. Some analysts have attributed the rapid growth in worker productivity in the early 1970s to the use of material incentives, but the relationship between the two is tenuous.¹² The new norms were not tied to pay until 1974. Moreover, in the early 1970s, considerable excess liquidity was still held by Cuban households. It is difficult, then, to perceive a significant connection between the jump in labor productivity between 1971 and 1974 and material incentives. Although other factors were certainly involved, it seems likely

that the shift in enterprise social relations (including invigorating unions, placing labor representatives on management boards, and revitalizing worker assemblies and work councils) aided in developing internal incentives as well as in eliciting useful ideas for improving productivity.

One other factor that might have contributed to increased worker productivity in the early 1970s was the promulgation of the 1971 compulsory work law. It specified that workers guilty of absenteeism were to be deprived of vacations, excluded from certain social benefits, and in severe cases, transferred to labor camps. But the law affected productivity in contradictory ways. On the one hand, output per unit of labor input would have been expected to drop as thousands of reluctant and often poorly trained individuals reentered the work force. On the other hand, in reducing absenteeism, productivity per employed person (rather than per hour worked) undoubtedly improved. Overall, no a priori basis exists for suspecting that the net effect of these two forces was positive.

In the course of the 1970s, worker participation in enterprise affairs and in the economy continued to expand, although the range of activity in which workers had input and their ability to impose changes opposed by management, the Communist party, or the government remained limited. For example, labor acquired the right to allocate scarce but coveted consumer durables and housing. First the central government would allot work centers (in some instances according to work performance), consumer durables, and building materials for housing. Then workers would decide how the items should be distributed among themselves—reportedly on the basis of merit (attendance and work record) and need (family size and living conditions).

Workers were also consulted increasingly about national plans as well as about their implementation at the enterprise level. According to official reports, the number of workers participating in the discussion and amendment of annual economic plans at the enterprise level increased from 1.26 million in 1975 to 1.45 million in 1980.¹³ Some evidence also suggests that workers believed their participation to be effective and not merely formal. A 1975 study found that 85 percent of workers surveyed believed that workers must be consulted in enterprise affairs and 58 percent felt that worker input was influential.¹⁴ Eighty percent of the 355 workers interviewed in another survey the following year reported that they “always or nearly always” played some meaningful role in production assemblies.¹⁵ In a 1977 survey conducted by two Cuban researchers of one thousand randomly selected workers in large Havana enterprises, the conclusions regarding worker participation in enterprise management were even more sanguine: workers from six different strata concurred that production meetings

were held monthly, that workers participated actively in these meetings, that management was receptive to worker suggestions, and that the deficiencies discussed at these meetings were "always or almost always" addressed and alleviated.¹⁶

These surveys hardly constitute conclusive evidence and must be interpreted with the usual cautions surrounding survey work. They nonetheless suggest that a certain degree of worker participation had been established, that a positive momentum had been created, and that the expectation of greater participation had become part of worker consciousness. The actual impact of workers on economic decision making must have remained minimal, however. Whatever salutary effects might have been achieved by opening channels of participation in the 1970s could not be maintained during the 1980s without deepening participation.

Material incentives also increased during this period, but slowly, unevenly, and inadequately. By the end of 1973, counting the norms borrowed from the early 1960s and the norms newly created or revised since 1970, almost two million workers (more than 80 percent of the labor force) held jobs with established norms. When the idea of linking pay to norm fulfillment was effected in 1974, however, Cubans quickly realized that most norms were hopelessly out-of-date. Thus many norms had been invalidated by the end of 1975, leaving fewer than one million workers with their pay tied to norms. Even then, most norms were unrealistically low (workers to be affected had participated in setting them) and were being surpassed by significant margins, with worker remuneration increasing 1 percent for every 1 percent of norm overfulfillment. More norms were invalidated, so that by the end of 1976 only 630,000 workers had their pay linked to norms. Norms continued to be decertified throughout 1977, and by year's end, only 570,000 workers had pay tied to norms. By this time a sufficient number of time-and-motion specialists had been trained to reverse the trend. The number of workers with pay tied to norms rose gradually to 719,140 (or 35.8 percent of all workers in the productive sphere) by September 1979. But even so, only 59.3 percent of such workers' time was connected to work with established norms.¹⁷

It is important to stress that the great majority of these norms were elemental, as opposed to semitechnical or technical. Even by 1987, 75.5 percent of all norms were elemental, 24.2 percent were semitechnical, and 0.3 percent were technical.¹⁸ These figures reveal that a significant subjective component remained in the norms in the Cuban view and that the norms were still too low in practice. For instance, during the last quarter of 1979, 95.5 percent of workers operating with norms either met or exceeded their quotas.¹⁹ Norms were too low in part because of worker and union involvement in fixing them

and in part because they were not revised frequently enough. As will be shown, the ongoing difficulties with perfecting the system of setting norms encouraged the Cubans to introduce new mechanisms for material incentives in the 1980s.

The biggest change in economic management in Cuba during the 1970s was the introduction of their new planning system, the Sistema de Dirección y Planificación de la Economía (SDPE), beginning in 1977.²⁰ The SDPE was modeled on the 1965 Soviet reforms and had several goals: to put enterprises on a self-financing basis; to introduce a profitability criterion with its corresponding incentives; and to promote decentralization, organizational coherence, and efficiency. Like the earlier Soviet reform, the SDPE has met with numerous obstacles, among them bureaucratic resistance, pervasive shortages, and an irrational price structure. Possibilities for decentralized decision making in Cuba have been constrained by the inadequate supply of skilled managerial and technical labor. Moreover, Cuba has confronted additional difficulties in adapting the Soviet-styled reform to Cuban political culture. As a result, Cubans have been evaluating and tinkering with the system since its inception. Critical judgments have been increasingly aired in public since the onset of severe foreign-exchange problems in 1985, the formation of the Grupo Central, and the 1986–87 rectification campaign (*campana de rectificación*).²¹ Nevertheless, when compared with the underdeveloped state of Cuba's planning institutions in 1976 and the lack of economic consciousness engendered by budgetary financing, the SDPE has brought progress and some improved efficiency to the Cuban economy.

My concern is not with the SDPE itself, but with the ways in which it has interacted with Cuba's incentive system. From this perspective, the SDPE represents the first systematic attempt to establish in Cuba a system of mature central planning, with stable institutions and defined functions. Because of these characteristics, when problems appeared, their source was more identifiable and their systemic nature was more apparent. At the same time, it is important to keep in mind that the SDPE only began to be implemented in 1977, in an environment where many essential planning institutions did not yet exist. The introduction of the SDPE coincided with Cuba's first five-year plan, indicating the inchoateness of Cuba's planning system at the time. Cuba still lacked an adequate statistical network, a legal system for enforcing contracts, a management-training program, proper financial institutions, and more. Many of the SDPE's core elements were not introduced until 1979 and 1980, and even then on an experimental basis. It is to the 1980s, then, that one must turn to consider the recent evolution of planning and incentives in Cuba.

THE 1980s

A central theme of the SDPE was decentralization. By putting enterprises on a self-financing plan and introducing profit sharing, enterprises were supposed to be exercising increasing autonomy from the center. This trend in turn was supposed to promote efficiency. It was also argued that without some degree of independence, the possibilities for worker participation would be limited to matters of work organization internal to the enterprise and to possible modification of the economic plan's control figures.

Nominal self-financing and profit sharing by themselves did little, if anything, to enhance the scope of enterprise decision making. In the context of centrally fixed prices, centrally determined investments, and extensive input shortages, these mechanisms cannot alter the basic mode of operation of centrally planned economies. If prices are centrally set every five years, they cannot be used as a rational guide to production or allocation choices; nor can they systematically identify by means of a profitability index those enterprises that are well managed. If shortages are commonplace, then otherwise efficient enterprises are often thwarted in their production efforts because of nondelivery, untimely delivery, or delivery of improperly specified or poor-quality inputs. Bottlenecks and planning imperfections, in turn, necessitate amendments to the plan after the beginning of the year—often raising an enterprise's output target without increasing its supply of raw materials. Enterprises, behaving rationally in this environment, will hoard inputs and thereby aggravate the shortage problem. If profits are fickle because of these and other factors, the planning authorities must limit, on equity grounds alone, the extent of profit retention and distribution, thus weakening the incentive effect. And if profits thrive in certain enterprises despite a lack of quality and properly specified production, then the center must devise new administrative regulations to control this outcome. In the end, the profitability algorithm becomes hopelessly complicated and the incentive mechanism, debilitated. If the center decides what investment projects are to be undertaken, then the fact that enterprises pay for increasing shares of investment costs out of their bank funds rather than out of state budget funds does not imply a substantive decentralization of capital allocation (the share of enterprise-financed investments in total investment financing in Cuba rose from 1 percent in 1981 to 30 percent in 1985).²²

Thus the SDPE, like the 1965 Soviet economic reforms, did not bring about significant change in underlying centralization of decision making in the economic mechanism. Many peripheral changes accompanied the SDPE, however, a number of them introduced in an effort to

adapt the Soviet centralized model to Cuban conditions, and these changes increased the flexibility of the system and allowed for some decentralization of decision making. Among these new policies was the post-1976 system of popular power that controlled the management of locally oriented service and production enterprises. In the mid-1980s, such enterprises amounted to 34 percent of all Cuban enterprises. The local budgets of popular power grew from 21 percent of the total state budget in 1978, to 26 percent in 1980, to 30 percent in 1982, and to 33 percent in 1984. By comparison, the local budget share in the Soviet Union in 1980 was 17 percent.²³

Another policy allowed enterprises to make their own contracts for products that were not in the *nomenklatura* and were not centrally balanced. As of 1983, some six hundred products or product groups were centrally balanced, which amounted to 70 to 80 percent of gross social product.²⁴ Encouragement has also been given to the development of "secondary" (nonplan) production, once the plan is fulfilled. Further, the realization of growing stocks of unused inputs within enterprises led to the practice of "resource fairs," where enterprises traded freely and directly with each other. The first fair was organized by the state technical supply committee (the Comité Estatal de Abastecimiento Técnico-Material) in 1979, and the fairs of 1979 and 1980 together witnessed the sale of forty million pesos of inputs. Inventory sales of production inputs by enterprises have continued to grow. In October of 1982, the president of JUCEPLAN reported that some five hundred million pesos worth of such resources had already been identified.²⁵ In May 1985, at the conclusion of the Fourth Plenary on the SDPE, the judgment was reached that the state technical and material supply committee was still allocating too many products and that the number should be significantly reduced, allowing enterprises to contract directly with each other for these products.²⁶

Other decentralizing measures included strengthening the Instituto Cubano de Investigación e Orientación de la Demanda Interna, introducing free-labor contracting in 1980,²⁷ and accepting more private productive and service activity, most notably in the form of housing construction cooperatives and free farmers' markets. The farmers' markets were opened in 1980. Sales of fresh vegetables and fruits grew rapidly until the government cracked down on "abuses" (such as exorbitant prices, excessive middleperson profits, and resource diversion from the state sector) in February 1982. Sales began to grow again after the promulgation in May 1983 of new regulations (20 percent sales tax, progressive income tax of private farmer income from 5 to 20 percent, and the expansion of the state-controlled parallel market to compete with the farmers' markets). But new abuses, more serious diversion of resources from state uses, and reported incomes above fifty thousand

pesos for truckers, wholesalers, and some farmers led to these markets being closed indefinitely in May 1986. Although such free-market sales of produce are permitted elsewhere in the Soviet bloc, private plots tend to be no larger than one-quarter or one-half a hectare (except in Poland). In Cuba such plots typically range from twenty to sixty hectares or more, hence the greater potential for economic and political disruption from the private agricultural sector.

Nevertheless, these decentralizing measures taken together did not alter the key dynamic of Cuban planning. Prior to the beginning of the rectification campaign in April 1986, various government documents and speeches revealed perception of the need for further decentralization and greater worker participation.²⁸ In particular, the documents of the Fourth Plenary evaluating the SDPE, held in May 1985, laid out a series of decentralizing measures that the Cubans intended to implement.²⁹ But the severe difficulties with foreign-exchange earnings that Cuba began to experience around that time, along with an excess of uncompleted investments projects, made resources too scarce to sustain the momentum toward decentralization. As a result, the state tightened its grip on the economy in order to minimize the use of foreign exchange and to bring existing investment projects to fruition.³⁰

Unintended or profligate use of resources in both private and public spheres came under increasing scrutiny, as did the lack of coordination among sectoral ministries of the economy and state planning institutions (for example, the Comité Estatal de Finanzas, the Comité Estatal de Precios, the Banco Nacional, and JUCEPLAN). Together with growing difficulties with labor indiscipline and enterprise overstaffing, these problems brought on the rectification campaign of April 1986. Market-oriented decentralization was put on hold, although some efforts at administrative decentralization have continued, such as establishing production brigades and reducing the power and the staff of the ministries.³¹ A central theme of the rectification campaign has been the deficient functioning of Cuba's material incentives, the next matter to be addressed.

Wage and Salary Scale

The first change in material incentives during the 1980s was the wage and salary reform of 1981. Its basic thrust was to increase relative salaries of highly skilled labor. Accordingly, the ratio of the highest to lowest wage in the new structure went up from 4.67 to 1 to 5.29 to 1. Whereas the lowest wage rose from 75 to 85 pesos per month, the highest increased from 350 to 450 pesos. Moreover, those at the top of the scale are also most likely to receive various perquisites. More recently, however, the austerity measures of January 1987 provoked concern for

TABLE 1 The Cuban Basic Monthly Wage Schedule, in 1987 pesos

Group	Production Workers	Administrative and Service Workers	Technical Workers			Directors
			I	II	III	
1	107 ^a	100 ^a				
2	118 ^b	100 ^a				
3	122	111				111
4	141	128	128	138	148	128
5	162	148	148	160	171	148
6	187	171	171	185	198	171
7	217	198	198	205	211	198
8			211	221	231	211
9	254	231	234	250	265	231
10			250	265	280	250
11			265	280	295	265
12			280	295	310	280
13			295	310	325	295
14			310	325	340	310
15			325	340	355	325
16			340			340
17			355			355
18			370			370
19			385			385
20			400			400
21			425			425
22			450			450

Source: Information supplied to the author by the Comité Estatal de Estadísticas.

^aThese rates were raised to these levels on 1 Feb. 1987 from 93 pesos for Group 1 production workers, from 85 for Group 1 administrative and service workers, and from 97 for Group 2 administrative and service workers. Altogether this increase benefited 186,000 workers.

^bThis rate was raised on 1 June 1987 from 107 pesos. It affected 108,343 workers.

lower-income earners, and the minimum wage was raised to 100 pesos as of 1 February 1987.³² As part of the wage-reform process, the average monthly wage continued to climb from 148 pesos in 1980 to 195 pesos in 1986. The 1987 wage and salary schedule is shown below in table 1.

In any case, changes in the basic wage and salary scale were so modest that it is difficult to believe that they stimulated an increased supply of skilled labor. This conclusion is reinforced by the consideration that managerial and technical personnel generally were not eligible for piece-rate increases or *primas* (the new system of work-related bonuses begun in 1980).

TABLE 2 *Payments for Overfulfillment of Norms, Shown in Millions of Pesos and as a Percentage of the Basic Wage in Cuba, 1980–1985*

	1980 (%)	1981 (%)	1982 (%)	1983 (%)	1984 (%)	1985 (%)
Total Economy	121.7 (3.9)	183.0 (4.7)	204.8 (4.7)	218.1 (5.1)	261.8 (5.8)	274.5 (6.0)
Industry	35.8 (3.7)	49.3 (4.3)	56.6 (4.6)	70.9 (5.4)	93.1 (6.5)	97.1 (6.8)
Construction	26.6 (5.2)	38.9 (7.0)	42.8 (7.9)	51.1 (8.4)	64.6 (9.4)	70.8 (10.3)
Agriculture	23.8 (2.6)	32.5 (2.9)	31.1 (2.6)	26.5 (2.3)	19.7 (1.7)	20.4 (1.8)
Forestry	2.9 (9.2)	3.5 (9.6)	4.1 (11.1)	5.3 (11.5)	5.9 (12.1)	5.8 (10.6)
Transport	13.6 (3.9)	17.0 (4.2)	19.6 (4.8)	16.7 (3.8)	21.6 (4.8)	21.3 (4.8)
Communication	0.4 (1.1)	0.5 (1.2)	0.4 (0.9)	0.6 (1.2)	0.5 (1.0)	0.6 (1.1)
Commerce	12.8 (2.7)	30.0 (5.7)	34.8 (6.1)	22.7 (3.5)	30.8 (4.4)	32.1 (4.6)

Source: Calculated by the author from data provided by the Comité Estatal de Estadísticas.

Payment according to Output

At first, norm or piece payments continued to be extended to a growing number of Cuban workers.³³ With the aid of some twenty thousand norm setters, 1.23 million Cuban workers had their pay tied to their output by 1981. This number stabilized, and by the end of 1985, 1.2 million workers (or 37.2 percent of the labor force) had their pay tied to output.³⁴ The value of payments for norm overfulfillment is shown below in table 2.

Even though payments linked to output grew rapidly (by 150 percent) between 1980 and 1985, they still constituted only 6 percent of the average worker's basic wage in 1985. By early 1986, then, the average worker had not become dependent on the extra payments related to norm fulfillment for a significant part of his or her income. In this sense, the timing was perhaps right for the regime to launch its April 1986 rectification campaign attacking abuses in the system of material rewards.

To be sure, these payments were more important in some sectors of the work force, such as construction and forestry, and some individual workers succeeded in grossly abusing the system. At the *reuniones de empresas* (enterprise meetings) held throughout the country during June and July of 1986 (and covered extensively in *Granma*), such abuses were amply identified and discussed: maintenance workers who were paid five times for repairing the same machine; radio announcers and surgeons paid a piece rate; construction workers with ridiculously low norms;³⁵ and sugar mill workers who received triple extra pay for the same work (exceeding their norm, working overtime, and increasing exports). These abuses of the system not only generated unjustified wage inequalities but caused considerable resentment among conscientious workers who did not bend or exploit the rules. Further, the severe difficulties with hard currency in 1986–88, when only one-third of the 1984 level was estimated to be available, imply even greater consumer goods shortages, raising questions about the efficacy of attempting to motivate greater work effort with pesos during this period.

Literature abounds in the West on the difficulties of effectively implementing piece-rate systems.³⁶ U.S. managers have increasingly abandoned the old-style Tayloristic piece-rate methods, while the Soviets have moved away from Stakhanovism.³⁷ Instead, human relations and group work approaches from Japan and Scandinavia have gained ascendancy in personnel relations in the West. Part of this shift can be attributed to the ways in which technology has transformed the work process, part to the higher levels of educational attainment in the work force, and part to the unrealistic expectations raised by “scientific management.” Yet ever since Lenin extolled the virtues of scientific management in 1918, the socialist bloc has clung to the notion of technical work norms.³⁸ The theoretical underpinnings of such norms, as laid out by F. W. Taylor, are highly dubious.³⁹ Can a workers’ motions really be treated like those of a machine part? Can all mental processes really be removed from the shop floor to the engineer’s drawing boards? Will not the subjective and social elements of work always play a major role?⁴⁰

In this regard, it should be observed that in 1987 more than 75 percent of Cuba’s work norms were still elementary, that is, were not technically determined by time-and-motion studies. Even if norms could somehow be technically and accurately set at some point in time, it is important to realize that there are over three million work norms in Cuba. With twenty thousand trained norm setters, much time elapses before a technical norm can be revised. For instance, one enterprise, a metal parts workshop under the Ministerio de Azúcar, reported that a new traveling crane had been introduced that tripled productivity, but the norm had not been altered.⁴¹ According to Fidel Castro’s remarks at the closing session of the Third Party Congress in December 1986,

many sectors of the economy went without norm revision from January 1983 through December 1986.

The fact that most Cuban norms are elementary means that they were generated jointly by the norm setter and the worker or worker representative without a time-and-motion study or that they are historical (carried over from an earlier period). Judging from the Cubans' own figures, these norms continue to be set at unrealistically low levels. In 1986 more than one-third of all workers with norms produced over 130 percent of their output norms.⁴² The figure would have doubtless been higher but for the workings of the ratchet effect. The likelihood always exists that if a worker significantly exceeds the set norm, it will be raised during the next period. This possibility serves as a powerful deterrent to most workers in countries with piece payments, who fear that they will have to work harder and harder just to maintain their income. Policymakers in some countries have endeavored to skirt the problem by promising workers (or factories with output quotas) that their norms would not be adjusted throughout the five-year plan. Trust in the policymakers can thus postpone the ratchet effect during the early years of a five-year plan in the case of workers with a short time horizon. The Cubans, however, have tended to adjust norms upward on a yearly basis when they are surpassed, and they have made it clear that they intend to continue doing so to avoid excessive piece-rate payments.⁴³ Furthermore, the norm intended to stimulate more effort can at times have precisely the reverse effect. That is, if a worker has a set output norm and he or she is mindful of the ratchet effect, then once the worker has reached the norm he or she may simply stop working, or for the sake of appearances, continue to work at a slower pace as the norm is approached. For example, during the discussions of rectification at the closing sessions of the Third Party Congress in December 1986, Manuel Valladares, first secretary of the party in Vertientes, Camaguey, reported that many sugarcane workers in his municipality completed their norms after four hours and then left work.⁴⁴ There is also the danger that quality will be sacrificed in order to meet quantity norms. This pitfall is particularly troublesome in an economy where synthetic success indicators are evaluated by hierarchical superiors, rather than by the consumers of the product.

Although most of these deficiencies of piecework apply equally to market and planned economies, it would seem that the workings of piece rewards would be even more problematic in a shortage-ridden economy where collectivist goals are being pursued. To be sure, Cuba has increasingly developed collective piece payments (*destajo colectivo*). By October 1986, 356,000 workers were on individual work norms, but the number of workers on collective norms had risen to 225,000.

There is little evidence that Cuba's experimentation with indi-

vidual piece payments, despite the enormous investment in training work specialists and implementing the system, has augmented worker productivity. Perhaps partly for these reasons, Cuba began to develop two new types of material rewards in 1979, and today material rewards are being de-emphasized and "political solutions" are being sought.

Bonuses

A second type of material reward, the *prima* or bonus, was introduced experimentally in 1979 and then gradually applied throughout the economy in 1980.⁴⁵ One function of the bonus is to plug up the loopholes left by the rest of the system of material incentives. Vertical rather than horizontal responsiveness in centrally planned economies results in an endemic problem with quality and properly specified output. The overriding logic of the central plan requires the center to attempt to balance the economy, to coordinate its parts, which can only be done if enterprises produce what they are planned to produce. This logic, then, places a premium on the physical output target, no matter how many other success indicators (such as profitability) are assigned to an enterprise. Profitability may have value, but given the often distorting effect on relative prices of centrally set prices, input shortages, lack of competition, and other factors, central planners have long realized that profitability or other synthetic financial indicators cannot take precedence over physical output. But if the enterprise is told by the ministry in charge to make sure that it meets its output target above all else, the enterprise will often respond by reducing quality, choosing a simpler product mix, hoarding inputs or using them inefficiently, not introducing new methods or products, and so on. This is where the *prima* comes in.

Varieties of *primas* abound in Cuba, but most involve giving a bonus to a group of production workers for increasing exports, saving raw materials or energy, overfulfilling quality and quantity targets, or developing new products.⁴⁶ These bonuses are generally paid every one to three months and are statutorily limited to 30 percent of a worker's basic wage. The total value of *primas* paid out in 1980 equaled 14 million pesos. This value rose steadily from 43.4 million pesos in 1981, to 54.4 million in 1982, to 58.3 million in 1983, 81.4 million in 1984, and 90.7 million pesos in 1985. In that year, *primas* were paid to one million workers, but despite their rapid growth, *primas* still represented only an average 1.9 percent of the basic wage.⁴⁷

It seems that the main problem with the *prima* was that it overlapped with other material incentives, so that a worker was getting paid many times over for the same work. In a number of cases, it was clear that the system had been designed and implemented carelessly.⁴⁸ In

other cases, the criteria for earning primas were too complex for the workers involved to understand. Consequently, the rectification campaign brought not a repudiation of primas but a decision to streamline and clarify them. The number of primas, however, was cut by one-third in agriculture and by similar proportions elsewhere in the economy.

Stimulation Funds and Profit Sharing

The concept behind stimulation funds (*fondos de estimulación*) is that enterprises can retain a certain share of their profits for their own use and that this incentive will stimulate productivity. The original intention was to divide the stimulation fund into three parts: the prize fund (*fondo de premios*) for distribution to the work force as profit sharing; the sociocultural fund for collective use by the enterprise for social projects such as beach cabins, recreational facilities, and buses; and the fund for small investments at the initiative of the enterprise. But due to the lack of resources, the strong investment drive typical of centrally planned economies,⁴⁹ and the plethora of unfinished investment projects nationwide, the investment fund was put on indefinite hold. As for the sociocultural fund, because of shortages in construction materials, it has generally been limited to be no more than 30 to 40 percent of the prize fund.

The stimulation funds were first introduced on an experimental basis in 191 enterprises in 1979. On the basis of actual enterprise performance, only 65 of them were able to form their planned funds. By 1985, following the major price reform of 1981, yearly price modifications, and many adjustments in the regulations governing the funds, 1167 enterprises managed to form stimulation funds that benefited one million workers (or 53 percent of the workers in the self-financing sphere of the economy). The total value of *premios*, or profit sharing, paid out to workers rose steadily from 4.2 million pesos in 1980 to 71.1 million pesos in 1985. Although this increase represented 935.5 percent growth during the five-year period, by 1985 *premios* still totaled only 78.4 percent of the total primas paid to workers, and only 25.9 percent of the total for norm overfulfillment. Viewed from a different perspective, in 1985 *premios* averaged only 1.6 percent of the basic wage in the productive sphere of the economy.⁵⁰ Moreover, from the standpoint of making *premios* a stimulus to work effort and creativity, several additional problems exist beyond their still-diminutive size as of 1985.

One of the more straightforward problems with *premios* is that they are paid out once a year (if at all) whereas primas and norm payments are paid out monthly or quarterly. The annual payment schedule renders *premios* too remote to be effective rewards. The obvious problem is that the state wants to encourage sustained profitability, not just

profitability during a particular fiscal quarter. Another problem encountered by the Cubans with the stimulation funds is that efficient enterprises instructed in the economic plan to make major investments out of their own profits have lacked sufficient leftover monies to form the funds.

A more important and troublesome problem with the stimulation funds concerns the basic operation of centrally planned economies. As discussed above, the allocational or incentive meaning of profits is highly dubious with prices set centrally and infrequently, with shortages, delays, and poor quality of inputs, with shortages of available consumer goods, and with little if any competition or choice of supplier. Some highly efficient enterprises may earn no profit while inefficient enterprises may earn large profits. The state attempts to compensate for these haphazard outcomes by creating regulations and contingencies to make the system more equitable. But in doing so, the state also renders the system of stimulation funds largely inscrutable and unpredictable for workers as well as for enterprise directors. If no clear link can be perceived between the size of the *premios* and the workers' effort or the enterprises' choices, then the incentive function of the *premio* has broken down.

In discussing the system of stimulation funds in the Soviet Union, Alec Nove once warned: "The payments into the incentive funds are calculated in a manner so bewilderingly complex that both author and reader would be reduced to paralytic boredom if the rules were here reproduced."⁵¹ I shall heed Nove's admonition only partially because more detailed information is instructive in grasping the nature of the problem. The actual system for forming stimulation funds has been changed a number of times since 1979, and its precise application varies across enterprises. For instance, enterprises with unavoidable losses (because of relative prices or other factors) are allowed to form stimulation funds out of reductions in losses from one year to the next. The actual funds come from the relevant ministry, which collects a "tax" from profitable enterprises in its branch in order to finance the fund for enterprises in the red. Described below is the system of stimulation funds operating in mid-1985. Since that time, one important change has been made. The normative adjustment coefficient used to be a function of planned and actual increases in success indicators from one year to the next. This system penalized enterprises with already taut (near capacity) plans. The coefficient is now mainly a function of the enterprise's performance relative to the average performance in the enterprise's branch, rather than the performance of the enterprise itself in the previous year.⁵²

Stimulation funds are formed in three stages, the first being the planning stage. Each enterprise is limited to three indicators in generat-

ing the fund. The three most common are increases in worker net productivity, decreases in cost per unit of output, and increases in output or exports. For each peso of planned value in each indicator, a norm determines the peso value to be contributed to the fund. This norm is then multiplied by an adjustment coefficient (which before 1986 was the ratio of the planned value of the indicator in the current year to that of the previous year) to arrive at the planned premio for each indicator. The total premio is calculated by summing the premios for each indicator. The adjustment coefficient is part of the attempt to induce enterprises to reveal their true production capacity. The higher the plan they set for themselves, the higher the coefficient and the greater potential size of the stimulation fund.

The second step is the formation stage. In this stage, the planned premio is multiplied first by the ratio of the actual value of the indicator achieved relative to its planned value and then by a "reduction coefficient" that varies between 0.2 and 0.8, being lower for overfulfillment than underfulfillment and lower for larger deviations (above or below) from planned values. The value resulting from this double multiplication is the "formed" premio for each indicator. Again, this value is summed over the three indicators to arrive at the total premio, with the additional constraint that the premio cannot exceed enterprise profits. The reduction coefficient together with the adjustment coefficient are intended to produce larger premios for fulfilling higher targets than for overfulfilling lower targets (for any given level of actual output). This procedure is the so-called taut-planning algorithm.

In the third stage, the "formed" premio is adjusted downward if the enterprise has not met a series of additional conditions. For instance, for every 1 percent of the value of the enterprise's supply contracts it does not meet, its premio is reduced by 1 percent; the same reduction is made for every 1 percent deterioration in the relationship between productivity and the average wage, or the share of output in the top-quality category, or other indicators. If underfulfillment for some indicators goes below a certain level, then the enterprise is prohibited from forming premios at all.⁵³ Although the idea of lifting the limit has been discussed, the stimulation funds have been restricted to a maximum of 8.5 percent of the enterprise's wage bill from the previous year.

Given the complexity of the determinants of the stimulation fund and the fact that many of the elements affecting its formation are out of the enterprise's control, it is little wonder that enterprises continue to place priority on meeting the physical indicators of the plan. Former JUCEPLAN chief Humberto Pérez stated the problem clearly at the Fourth Plenary: "In this sense, our system has mostly functioned in a formal sense only, superimposing a veil of monetary and financial rela-

tions when, just as in the past, production for production's sake still prevails, material indicators still dominate, and profit and profitability play a derivative and passive role."⁵⁴ Financial indicators such as profitability will continue to play a distant secondary role without major structural reforms, probably including scarcity pricing for most goods.

Taken together, payments for norm overfulfillment, primas, premiums, and overtime work (what the Cubans call the *parte móvil*, or variable part, of the wage) totaled only an average 10.6 percent of the basic wage in 1985. In the mid-1970s in the other countries in the Council of Mutual Economic Assistance, the variable part of the wage ranged from 15.2 percent in Hungary to 55.2 percent in the German Democratic Republic, with Bulgaria at 39.8 percent, Poland at 31.7 percent, the USSR at 36.4 percent, and Czechoslovakia at 43.8 percent.⁵⁵

Although conditioned by a country's political culture and economic structures, material incentives have functioned most effectively in centrally planned economies when the state has relaxed controls over parts of the economy, usually implying an expansion of private-sector activities. This relaxation is necessary to make available resources and goods not accounted for by the plan. Without a material counterpart, the extra pesos of income offered by incentives cannot be translated into higher worker utility and quickly lose their motivational impact. It is also possible for the state to plan for surplus production to be made available for unplanned purchases. Cuba in fact attempts to plan surplus production and succeeds to a certain degree. The real problem, however, is that when the center attempts to plan decentralized purchases that are supposed to be unplanned, the spirit of flexibility and enterprise autonomy is largely undermined. This effort is also constrained by the center's instinct for taut planning and the economy's tendency toward shortage.

The conflict arises, however, as the private sector grows and takes on a dynamic of its own, challenging the hegemony of the state sector. As opportunities for private gain expand, material and labor resources intended for the state sector are often diverted for private uses. Thus the free farmers' markets in Cuba prompted the use of state trucks for delivering private produce, and along with the trucks went their drivers, who frequently left their state jobs early to carry out their new, handsomely remunerated tasks. According to Castro, some truck drivers were earning more than fifty thousand pesos a year, while Cuba's top surgeons earned five thousand. Wealthy farmers were known to offer twenty thousand pesos and more for Soviet Ladas on the free market, while model workers had to queue for years to be able to purchase a car. Other free marketeers bought state-subsidized toothbrushes, melted the plastic, and resold it as jewelry in artisan markets. None of this behavior runs against the ethical norms of market econo-

mies, but it does create conflicts within a socialist, planned economy. These conflicts (with both their economic and ideological dimensions) provoked the rectification campaign and the decision to place more emphasis on political consciousness and moral incentives.

Conciencia and Worker Participation

The insufficient stimulation and growing disruptiveness of material incentives caused Cuban leaders to look again to political consciousness or *conciencia* as a means of motivating Cuban workers. In speech after speech and meeting after meeting, Cuban leaders emphasized the importance of political work, socialist values, and discipline.⁵⁶ According to accounts in the Cuban press, evidence confirmed that the new emphasis combining *conciencia* with streamlined material incentives has yielded some short-term gains in productivity and work organization.⁵⁷ But exhortations without substantive structural reform sooner or later wear thin. During normal periods, political consciousness is insufficient to stimulate production in the absence of meaningful worker involvement in decision making in enterprises and throughout the economy.⁵⁸

Some evidence suggests renewed commitment to worker participation and some favorable developments. The rhetoric, if not the substance, of Soviet bloc policies calling for greater worker democracy further improves the prospects for growth in this area. On the one hand, published figures suggest that increasing numbers of workers are discussing the plan and making modifications in its control figures. Some leaders' pronouncements have also been sanguine. For instance, Humberto Pérez claimed before the National Assembly in December 1983 that worker participation in the 1984 annual plan was the most extensive to date.⁵⁹ Three years later, the new JUCEPLAN director, José López Moreno, alluded before the National Assembly to radical changes in the methodology for drafting the 1987 plan and a significant deepening in worker participation.⁶⁰ Unfortunately, no details were provided.

On the other hand, some assessments have been more pessimistic. In an interview published in *Bohemia* 29 May 1985, Humberto Pérez stated that one of the greatest weaknesses of the SDPE was its failure to develop worker participation further and that most improvements were only in form, not substance. In June 1986, Roberto Veiga, the general secretary of the Confederación de Trabajadores Cubanos (CTC), warned that worker dissatisfaction with the inadequate solutions and explanations offered at worker assemblies could undermine the positive role of worker participation in promoting economic efficiency.⁶¹ An article in the CTC newspaper *Trabajadores* on 9 September 1986 reported a discussion at the Fourth Congress of the Sindicato Nacional de Trabajadores

Agropecuarios y Forestales to the effect that continuing problems with worker participation were causing workers to feel insufficiently identified with the economic plans.⁶² Overall, it seems that progress regarding worker participation to date has been partial and uneven, leaving much to be desired.

At least three aspects appear to be involved in deepening worker participation. The first involves a significant shift in power relations at work centers toward the workers. The weakening of work councils' control over worker discipline at the beginning of the 1980s may have been necessary, but symbolically at least, it represented a move to strengthen the hands of enterprise directors.⁶³ The pendulum must swing back to give the workers greater control over the internal labor process and work conditions. According to a broad body of evidence, without worker involvement in basic production decisions at the shop floor level, effective participation in extra-enterprise issues becomes unlikely.⁶⁴ That is, if workers do not develop participatory habits in their daily work experience, they are unlikely to participate in more remote and intractable areas.

The second aspect involves stretching the parameters of enterprise decision making. This goal can be accomplished by having the state restrict the purview of the economic plan, allowing more production to be decided at decentralized levels. This approach appears to be one of the major thrusts of the present Gorbachev reform, as it was earlier in the Hungarian and Chinese reforms. The idea is that the state will plan more effectively if it plans less. Castro has seemed to respond to this theme at times. At a meeting of the party's leadership in July 1986 (after the beginning of the rectification campaign), Castro reflected on the excess of paperwork and administrators and on the state attempting to do too much: "Por exceso de controles, no tenemos control."⁶⁵ Even though decentralization reforms in Cuba are on hold and the national commission created in May 1986 to study the SDPE is still deliberating, it seems likely to me that the Cuban economy will resume this direction as constraints on resources attenuate in the future.⁶⁶

Another potential way to increase enterprise flexibility is through amalgamation of production units. Since 1977 Cuban enterprises have been joined together with other horizontally or vertically related enterprises to form *uniones de empresas*.⁶⁷ By bringing units at the base together, it is hoped that the new larger units will be able to carry out more functions (including research and development, materials supply, and maintenance and repair) and thus become less dependent on the center. As of 31 December 1985, 42 uniones in industry involved some 390 of the 800 industrial enterprises, and 61 uniones economywide involved almost 500 of the 2240 enterprises on the island. Not enough evidence exists at this time to assert that the uniones have facilitated

the intended decentralization, but several planning administrators have expressed this judgment to me.

Yet another organizational change that holds significant promise for enhancing worker participation is the system of production brigades implemented since 1981. Production brigades are subunits of an enterprise that perform a distinct productive task. While they remain part of the enterprise, they also begin to function in theory as a separate accounting unit. Enterprises contract out a production plan to the brigade, and the brigade receives bonuses according to its performance. It is expected that brigades will eventually become self-financing and will form their own stimulation funds. Brigades are allowed to organize their own work as well as hire (with suggestions from above) and fire their own brigade chiefs.⁶⁸ By making the productive unit smaller and the incentive more immediate, the government hopes to promote greater worker participation and productivity.

The brigades began experimentally in agriculture in 1981 and in industry in 1983. By 1986, 2500 brigades had been organized in some 300 enterprises—120 state farms, and 180 enterprises outside agriculture. Agricultural brigades contain an average of seventy-five workers each. Early indications are that the brigades are stimulating both increased worker involvement in decision making and increased productivity.⁶⁹

The brigades might appear to work in the opposite direction from unions—one diminishes the size of the administrative unit while the other enlarges it. This generalization is true, but the purposes differ, and their effects on participation operate in distinct and potentially complementary ways. The union, which can be but usually is not an accounting unit, allows more activities to take place at local initiative, free of central tutelage. The brigade reduces the size of the decision making and incentive unit related directly to production matters.

The third aspect of deepening worker participation is to identify a more effective avenue for popular input in setting the basic priorities of the economic plan. One cannot speak meaningfully about democracy with regard to material balances, technical supply allocations, financing arrangements, or other details of the plan, but employing democratic procedures in defining the central goals of one-year or five-year plans seem to be practicable. The present methods of representation through commissions of the *Asamblea Nacional*, the CTC, and the *Instituto de la Demanda Interna* are not entirely hollow but are too tenuous and indirect. Referenda and extensive educational campaigns on such issues as the development of nuclear power, the economy's investment ratio, and the relative priority to residential construction are also desirable, albeit costly in resources.

In short, the 1980s have witnessed some movement toward

broader and more meaningful worker participation, but progress has been uneven and incremental. More fundamental reforms are required if the desired effects on *conciencia* and productivity are to be attained.

CONCLUSION

Central planning politicizes the economy. It constrains the dissemination of market signals (namely, prices) and seeks to avoid the situation where producers are driven solely by self-interest. In theory, however, economic coordination is administered and purposeful.

In the absence of universal altruism, centrally planned economies must find a method to motivate producers. This necessity is particularly problematic given the tendency of centrally planned economies to maintain full employment. Limited use of material incentives and simulated market signals have had some success, but the logic of central planning and the ethical values of socialism preclude excessive reliance on these motivational and allocational instruments. Effective operation of a planned economy, then, requires the development of nonmaterial incentives. To date, however, the extreme economic and political centralization of centrally planned economies has also precluded the full development of internal incentives via greater worker democracy.

The present political-economic climate in centrally planned economies favors greater pragmatism, eclecticism, and openness. Widespread experimentation is being made with both market and administrative decentralization as well as forms of enhanced worker participation.

Cuba's efforts fit into this pattern of experimentation. After a decade of decentralizing reforms, a moratorium on further market and private sector liberalization was called in April 1986. Similar moratoria were called in Hungary and China after periods of rapid liberalization. In more deliberate fashion, both Hungary and China have now resumed their course of reform. Ideological and political forces obviously differ in Cuba, however, and the eventual character and celerity of the reform process will be distinctly Cuban. This essay has argued that as Cuba continues to struggle to find the best balance among material and nonmaterial incentives, market and plan, private and public spheres, the success of its economic system will correlate directly with the introduction of decentralizing and democratizing reforms.

NOTES

1. Since 1986 it has become more fashionable in Cuba to drop "Planificación" and refer to the system as SDE.

2. For one, see Juan Espinosa and Andrew Zimbalist, *Economic Democracy* (New York: Academic Press, 1978). Also see Martin Carnoy and Derek Shearer, *Economic Democracy* (New York: Sharpe, 1980); *Participatory and Self-Managed Firms*, edited by Derek Jones and Jan Svejnar (Lexington: Heath, 1982); and Wlodimierz Brus, *The Economics and Politics of Socialism* (London: Routledge and Kegan Paul, 1973).
3. José Acosta, *Teoría y práctica de los mecanismos de dirección de la economía* (Havana: Editorial de Ciencias Sociales, 1982), 305.
4. Acosta, *Teoría y práctica de los mecanismos*, 302; and Alexis Codina, "Worker Incentives in Cuba," *World Development* 15, no. 1 (Jan. 1987):127–38.
5. Codina, "Worker Incentives," 311.
6. In theory, self-financed enterprises are supposed to cover all their expenditures from their own revenues, without subsidies from the state budget. Generally, self-financed enterprises are also expected to turn a profit. The alternative form is the enterprise that is budget-financed. Such enterprises have their expenditures covered by the state budget and are not judged by the existence of profits or losses. In practice, self-financed enterprises in Cuba and other centrally planned economies generally do receive state subsidies and are not allowed to go bankrupt.
7. Codina, "Worker Incentives," 130. On the history of piece payments in Cuba, see also Lázaro Domínguez, "Para un análisis de las deficiencias en la normación del trabajo en Cuba," *Cuba Socialista* 4, no. 7 (July–Aug. 1987):96–103.
8. Two interesting sources on this debate are Roberto Bernardo, *The Theory of Moral Incentives in Cuba* (University, Ala.: University of Alabama Press, 1971); and *Man and Socialism in Cuba: The Great Debate*, edited by B. Silverman (New York: Atheneum, 1973). The Silverman volume contains translations of several original articles from the debate. An excellent Cuban source on this period is Ruby Rodríguez Suárez and Eduardo Montadas, *Evolución histórica de la planificación en Cuba* (Havana: Facultad de Planificación de la Economía Nacional e Industrias, Universidad de Havana, n.d.).
9. Carollee Bengelsdorf, "Between Vision and Reality: Democracy in Socialist Theory and Practice," Ph.D. diss., Massachusetts Institute of Technology, 1985, 166. See also Linda Fuller, "The Politics of Workers' Control in Cuba, 1959–1983," Ph.D. diss., University of California, Berkeley, 1985, ch. 7.
10. Codina, "Worker Incentives," 131.
11. I have detailed the failure to develop worker participation in the 1960s in "Worker Participation in Cuba," *Challenge* 18, no. 5 (Nov.–Dec. 1975):45–54. Other negative factors were also working to constrain the effectiveness of Cuban economic policy during this period.
12. Carmelo Mesa-Lago is one such author. He reports that economywide output per worker jumped 21 percent in 1972. See Mesa-Lago, *Cuba in the 1970s*, revised ed. (Albuquerque: University of New Mexico Press, 1978), 39.
13. These figures were taken from Castro's speeches to the 1975 and 1980 party congresses.
14. M. Pérez-Stable, "Institutionalization and Workers' Response," *Cuban Studies* 6 (1976):331–34. Pérez-Stable's sample of fifty-seven workers was selected nonrandomly and represented disproportionately workers who are more highly educated and politically conscious.
15. Antonio Herrera and Hernán Rosenkranz, "Political Consciousness in Cuba," in *Cuba: The Second Decade*, edited by John Griffiths and Peter Griffiths (London: Britain-Cuba Scientific Liaison Committee, 1979), 48.
16. Armengol Ríos and D'Angelo Hernández, "Aspectos de los procesos de comunicación y participación de los trabajadores en la gestión de las empresas," *Economía y Desarrollo* 42 (July–Aug. 1977):156–79.
17. Acosta, *Teoría y práctica de los mecanismos*, 317–18. The share of norms that were elemental actually increased between 1982 and 1987. See L. Domínguez, "Deficiencias en la normación," 90.
18. *Dictámenes de la IV Plenaria Nacional de Chequeo del Sistema de Dirección y Planificación de la Economía*, (Havana: JUCEPLAN, 1985), 52; and Mieke Meurs, "Planning, Participation, and Material Incentives: Motivating Efficiency in Socialist Cuba." Paper presented at the Third Annual Workshop on Soviet and East European Economies, Washington, D.C., 1987, 30.

19. JUCEPLAN, *Segunda Plenaria Nacional de Chequeo de la Implantación del SDPE* (Havana: JUCEPLAN, 1980), 297.
20. Although the SDPE was adopted in 1976, the initial year was designated as a year of study and preparation. The actual implementation began in 1977.
21. Some analysts consider the establishment of the Grupo Central in December 1984 as the beginning of the current rectification period. The Grupo Central is composed of the vice-presidents of the Council of Ministers, all the ministers, the president of JUCEPLAN, provincial heads of Poder Popular, and heads of departments of the Communist party. The *raison d'être* of the Grupo Central is too complex to analyze fully here. Suffice it to suggest that its formation in part was an effort to weaken ministerialism (both sectoral chauvinism and excessive tutelage over enterprises), to facilitate lines of command and communication between the Council of Ministers and JUCEPLAN, and partly to deal with the worsening foreign-exchange crisis as effectively and expeditiously as possible. Finally, the Grupo Central was part of the larger effort to reinvigorate and rationalize the planning apparatus as well as to renew its personnel.
22. See the Banco Central publication *Informe Económico*, March 1986, 6.
23. Nelson Mata, "Los gastos de presupuesto de los Organos Locales del Poder Popular," *Finanzas y Crédito*, no. 5 (1986):56.
24. B. Palacios et al., "Posibilidad de aplicación del balance intersectorial físico valor al proceso de elaboración del plan anual de la economía cubana," *Cuba: Economía Planificada* 1, no. 2 (Apr.–June 1986):9–36.
25. *Granma*, 5 Oct. 1982, p. 2. Additional data through 1984 and analysis is provided in Oscar U-Echevarría et al., "Consideraciones metodológicas para el cálculo de la demanda de piezas de respuesto," *Cuba: Economía Planificada* 1, no. 2 (Apr.–June 1986):110–39.
26. *Dictámenes de la IV Plenaria*, 25.
27. This system was actually begun on an experimental basis in 1979 in the province of Pinar del Río, but it was not implemented in Havana until 1986. The Soviet Union has employed this system for many years.
28. The *campana de rectificación* is the name given to the current period of reevaluating the balance of material and moral incentives, redressing the perceived excesses connected to material incentives and private-sector activity, and addressing other problems of economic and political management.
29. See *Dictámenes de la IV Plenaria*. A clear indication of decentralizing inclinations at the time came in the speech by Humberto Pérez, then JUCEPLAN president, before the closing session of the Fourth Plenary: "We do material balances, we assign material resources, we set output targets, basing our decisions on technical consumption norms and inventory levels; we attempt to do all this at the most centralized level when, in fact, these things are only feasible at the decentralized level of the enterprise" (my translation). See "Intervención de Humberto Pérez," *Clausura de la IV Plenaria Nacional del Chequeo del SDPE*, 25 May 1985, 25.
30. At the time of this writing (April 1988), it is clear that the direction of policy change in Cuba differs from that in the Soviet Union. Some analysts have predicted that this discrepancy will produce political conflict between the two countries, or at least discomfort. They have pointed to the sparse coverage in the Cuban press of the details of Gorbachev's economic reforms and statements by Castro that Cuba must find its own path. In fact, Castro has made such statements repeatedly during the course of the Cuban Revolution, and Gorbachev's reforms, while not highlighted in daily newspapers, have been seriously analyzed in the popular biweekly *Novedades de Moscú*. For various reasons, the Cuban government does not see the Gorbachev reforms as an appropriate topic for mass discussion in Cuba at this time. But if true discomfort and potential conflict were involved, it seems unlikely that the coverage in *Novedades de Moscú* would be tolerated, especially since *Novedades* sells out within a few hours of appearing at the kiosks.
31. Because two of Cuba's market-oriented reforms (the free farmers' markets and the direct sale of private housing) were actually ended, some readers might object to my characterizing the decentralization process as having been "put on hold" rather than

"reversed." The farmers' markets and free direct housing sales represented a particular aspect of the decentralization process in food distribution and housing. The farmers' markets never amounted to more than 3.2 percent of retail sales, and by 1985, their last full year of operation, they represented only 1.2 percent of retail sales. A more substantial process of decentralization in food distribution has occurred through expanding the parallel markets, which are state-run but charge prices approximating supply and demand conditions. The quantitative growth of parallel-market sales have more than made up for the disappearance of the peasant markets. Similarly, the major change in housing policy came with the reform aimed at eventually converting all tenants into homeowners and allowing the private exchange and sale of houses. The private sale of houses is still permitted, but now it cannot take place directly between the buyer and seller. To avoid speculation and exorbitant prices, the state now regulates such sales. The basic change, however, is still in place. This explanation is not intended to endorse the new policies but to argue that no reversion to the centralization of the 1960s and early 1970s has occurred. Decentralization in a centrally planned economy is a complex process that assumes varying forms and never progresses linearly. To describe decentralization as "put on hold" does not deny the backsliding or retrenchment that has taken place. Such retrenchment is normal and has occurred in other countries that eventually continued their reform processes. It seems more likely to me that the Cuban reform process will again move toward greater decentralization in the near future rather than return to the centralization of earlier periods, hence my description as "put on hold."

32. A second wage increase in June 1986 benefited an additional 208,343 low-income workers (see table 1). The austerity measures curtailed various perquisites of officials, such as personal use of official cars. But other measures, such as retail price increases on various goods and the reduction of the monthly kerosene ration, disproportionately affected low-income budgets, a basic reason for the wage increases.
33. In Cuba there are actually five different systems of pay according to output, all based on norms and generally referred to as *sobrecumplimiento de las normas*. In order of the number of workers covered, these systems are: *destajo individual* (individual piece rates with specially set rates); *acuerdo o campo terminado* (pay according to number of tasks fulfilled where direct output quantification is not feasible); *destajo colectivo* (collective piece rates where technology mandates group evaluation); *sistema del 1 x 1* (individual piece rates with pay increasing 1 percent for every 1 percent increase in production above the norm, and vice versa); and *destajo indirecto* (mostly for auxiliary workers, where direct output cannot be measured, with the result being that pay is a function of total output of the workers who are supported by the auxiliary worker).
34. Humberto Pérez, *Intervención: clausura de la III Plenaria Nacional de Chequeo de la Implantación del SDPE* (Havana: JUCEPLAN, 1982), 2.
35. An excellent article on the difficulty of applying rational norms and prices to construction work, given its highly variegated and specialized nature, is José Salom, "Influencia del exceso de rentabilidad en las empresas de construcción civil y montaje en el proceso inversionista," *Teoría y práctica de los precios*, 2–85. Another article based on a December 1986 survey of 471 enterprises observes that in one construction enterprise, norm overfulfillment as high as 2447 percent was reported. See L. Domínguez, "Deficiencias en la normación," 95.
36. See, for instance, William Foote Whyte, *Money and Motivation* (New York: Harper, 1955); Espinosa and Zimbalist, *Economic Democracy*; W. Ouchi, *Theory Z* (New York: Avon, 1982); and Harry Braverman, *Labor and Monopoly Capital* (New York: Monthly Review, 1974).
37. Leonard Kirsch, *Soviet Wages* (Cambridge, Mass.: Massachusetts Institute of Technology Press, 1972).
38. Vladimir Ilich Lenin, "The Immediate Tasks of the Soviet Government," *Pravda*, no. 83, 28 Apr. 1918.
39. Frederick Winslow Taylor, *Scientific Management* (New York: Harper and Row, 1947).
40. Interesting case studies on the perverse effects of piece rates can be found in *Case*

Studies on the Labor Process, edited by Andrew Zimbalist (New York: Monthly Review Press, 1979).

41. *Granma Resumen Semanal*, 14 Dec. 1986, p. 4.
42. *Granma*, 14 Jan. 1987, p. 5.
43. For one, see L. González Rodríguez, "Revisión de las normas de trabajo," *Bohemia*, 6 Mar. 1987, pp. 49–51.
44. *Granma Resumen Semanal*. 14 Dec. 1986, p. 3.
45. A useful background article on the prima is Aristides Pérez, "La prima como forma de estimulación material," *Economía y Desarrollo* 80 (May–June 1984):153–70.
46. Primas for overfulfillment of quantity targets have been used primarily in agriculture. These primas are for enterprise plan fulfillment, not for the fulfillment or overfulfillment of work norms, as has been argued by Sergio Roca in "State Enterprises in Cuba under the New System of Planning and Management," *Cuban Studies* 16 (1986). Also see Andrew Zimbalist, "Interpreting Cuban Planning: Between a Rock and a Hard Place," *Cuban Political Economy: Controversies in Cubanology*, edited by Andrew Zimbalist (Boulder: Westview, 1988).
47. Calculations based on figures provided to the author by the Cuban Comité Estatal de Estadísticas.
48. See, for instance, the analysis of primas in *Dictámenes de la IV Plenaria*, 53.
49. For one, see Janos Kornai, *The Economics of Shortage* (Amsterdam: North Holland, 1980).
50. Calculated from data provided to the author by the Comité Estatal de Estadísticas.
51. A. Nove, *The Soviet Economic System*, (London: Allen and Unwin, 1977), 88.
52. This change in determining the normative adjustment coefficient began in 1985 and has not been applied uniformly to all sectors of the economy.
53. For the tenacious reader, a more detailed description of the system with numerical examples can be found in Carlos Martínez F., "El perfeccionamiento del mecanismo de estimulación material en Cuba," *Cuba: Economía Planificada* 1, no. 1 (Jan.–Mar. 1986):157–202.
54. Pérez, *Clausura de la IV Plenaria*, 25 (my translation).
55. Acosta, *Teoría y práctica de los mecanismos*, 291.
56. In a sense, the motivation issue is all the more pressing in the late 1980s because Cuba's young workers represent a new generation. They have experienced neither the revolutionary struggle nor the romantic early years of the revolution.
57. See, for instance, *Granma's* coverage of Roberto Veiga's speech before the plenary of the CTC National Council in the issue dated 14 Jan. 1987.
58. For an excellent theoretical discussion on the vital role of worker participation in centrally planned economies, see the work of Wlodimierz Brus, particularly *The Economics and Politics of Socialism*. Also see *Comparative Economic Systems: An Assessment of Knowledge, Theory, and Method*, edited by Andrew Zimbalist (Boston: Kluwer-Nijhoff, 1984).
59. *Granma*, 1 Jan. 1984, p. 4.
60. *Granma Weekly Review*, 11 Jan. 1987, p. 3. Some workers have been lauded in the Cuban press for denouncing bureaucratic managers. One such worker in a cement factory in Santiago, Cuba, Silvia Spence, has been made into something of a national hero. See the detailed and fascinating coverage of her case in *Granma*, 25 and 26 Dec. 1986.
61. *Trabajadores*, 6 June 1986, p. 1. Cited in Mieke Meurs, "Planning, Participation, and Material Incentives."
62. Cited in Meurs, "Planning, Participation, and Material Incentives."
63. See Linda Fuller, "Power at the Workplace: The Resolution of Worker-Management Conflict in Cuba," *World Development* 15, no. 1 (Jan. 1987):139–52.
64. See the review of this literature in Espinosa and Zimbalist, *Economic Democracy*, ch. 5. Also see, Carole Pateman, *Participation and Democratic Theory* (Cambridge: Cambridge University Press).
65. *Bohemia*, 4 July 1987, p. 7.
66. See Gordon White, "Cuban Planning in the Mid-1980s: Centralization, Decentralization, and Participation," in *The Cuban Economy toward the 1990s*, edited by Andrew

- Zimbalist (Boulder, Colo.: Lynne Rienner, 1987). For a discussion of the sweeping mandate of the Study Commission (Comisión Nacional del Sistema de Dirección de la Economía), see *Cuba: Economía Planificada* 1, no. 3 (July–Sept. 1986):179–87.
67. The purpose and evolution of *uniones de empresas* are discussed in Gilberto Díaz Martínez, "El sistema empresarial estatal en Cuba," *Cuba Socialista* 8 (Sept.–Nov. 1983):74–107.
 68. The practice of brigade members selecting their own chief has also developed unevenly. When workers are unaccustomed to exercising such authority, it often takes time for worker attitudes and behavior to adapt to their new, augmented prerogatives. For instance, it appears that by early 1987, most brigade chiefs in agriculture were still being appointed by the state farm administration and approved by the Ministerio de Agricultura. Letter from Mieke Meurs to the author, June 1987. On the internal structure of the brigades, see Dharam Ghai, Cristóbal Kay, and Peter Peek, *Labour and Development in Rural Cuba* (Geneva: International Labour Organization, 1986), ch. 4.1.
 69. This conclusion is supported by three separate studies as well as by my interviews. See Cristóbal Kay, "New Developments in Cuban Agriculture: Economic Reforms and Collectivization," paper delivered at the Latin American Studies Association Meetings in Boston, October 1986; Mieke Meurs, "Planning, Participation, and Material Incentives"; and Alexis Codina, "Worker Incentives." This conclusion is also supported in the case of non-sugar agriculture by two detailed unpublished studies of the Cuban Ministerio de Agricultura: "Evaluación de la experiencia sobre la introducción de la Brigada Permanente de Producción y el cálculo económico interno en las Empresas del Ministerio de la Agricultura," Nov. 1985; and "Informe: resultados económicos de las empresas constituidas en BPP," 1986.