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TEHERAN: A NEW "WORLD CITY" EMERGING

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Teheran is perhaps the least mysterious Oriental metropolis, even though few outsiders have bothered to learn Farsi, the national language. The principal reason is that its chief planner, institution-builder, and publicist, the Shahanshah, has managed to attract a great deal of attention in the English-speaking world over the last few years. The reporting on issues and approaches to national development has been quite thorough, from the style of personal leadership to the methods applied by SAVAK, the secret police agency. Therefore the expectations about the society held by any one taking the trouble to read what is readily available would not be far off the mark. Analysis on the spot tends only to give these impressionistic sketches some depth; it does not overturn them in the way that research on China or South and Southeast Asia so often contradicts the conclusions reached by tourists and the educated public. Most of the reports, however, have used Teheran as backdrop; they selected from its cityscape items to illustrate points made about the nation as a whole. Therefore Teheran as a living entity has yet to be fitted into a niche in the hierarchy of cosmopolitan metropolises, the fast set that it is now joining. Thus a fascinating task is left open for urbanists over the next decade or so. This short assessment is intended to be a guide to the most interesting features displayed by the world's largest metropolis, created by wealth derived from petroleum.

Each capital city must in some important way map the country it governs when it distributes facilities and activities over space. In the Teheran of little more than a generation back, when it was spilling out

of the old city walls, the houses of the feudal barons represented large estates in the countryside, while merchants in the bazaar offered the goods from the respective regions for barter and exchange. Both had nuclei of loyal retainers from the home province living around them. Then, as more villagers and townspeople commingled with the retainers, special communities were formed with residents all of one district and speaking the same dialect. Neighboring urban precincts came from other districts but may have shared either a language or a loyalty. Thus a walking trip around Teheran of that period allowed one to visit different districts reflecting the territory it dominated and to contact representatives of those peoples. But now the metropolis is recreating in geographical form a more abstract representation of the nation and its place in the world while it is expanding its area by almost tenfold.

The new Teheran is in the process of mapping the structure of social classes, more or less independent of ethnic origins. The under-classes, now in the process of being legitimized, squatted in and around the clay pits and on the desert floor to the south. The working classes have gained only a couple meters of elevation on them but their walls stand straighter and higher. The traditionalists who stuck with the old city and its bazaar rate a notch or two higher yet. Then stratum upon stratum as one proceeds up the slope, the exhibition of professional standing, wealth, and influence becomes ever more explicit. At the top, beneath towering cliffs, are residences of the royal family, relicts of the feudal order, and the new super-rich behind 3-4 meter walls with the tops of the trees showing behind. By common agreement each status is granted a readily distinguished amount of garden space and marble front that will distinguish it from its superiors and inferiors.

Do not conclude from this that Teheran is fully systematic in its decantation of the social classes upon the talus slope. There are urban tract developments less than five years old in which the strata are recapitulated in the small, with the lowest class furthest from the avenue or at the bottom, receiving the debris cast off by the higher classes above. (Often the tract is a slice of shallow watershed, where avenues follow the ridges.) Elsewhere a village may have been enveloped by the middle and upper-middle classes, whereupon its precincts are swelled by the need for construction and service labor. It breaks down the monotony of single price range housing built around it. These influences of past occupation and of incremental growth will undoubtedly determine future development as well, but the tracts are definitely expanding in size as the financing of developers, whether private or government, gains greater leverage.

The new Teheran harbors the largest population of automobiles on the continent of Asia, but the vehicles are still almost all young and lithe because they came onto the scene so recently. They do not labor up the slope, nor do their exhausts spew black smoke. The traditional parts of the city have traded in their ornate one-horse carts and hand carts for three-wheeled Vespa vans, Datsun minivans, or the German-Swiss velo. Only a scattering of the old portage equipment can be found at work. Since the population density is so high most trips are short enough to be pedestrian trips, but big green double-decker buses plow through the market-oriented traffic. Up slope the one car family predominates, so the wide avenues are filled from ditch to ditch at rush hour, and parking is extremely scarce. Teheran has only two underpass-overpass schemes in operation, and several more under construction, so cross traffic can only be handled through the use of unintegrated traffic lights and a hundred or so

arm waving traffic-directing members of the police corps. Thus the Teheran of 1974 should be equated with Tokyo or Milan of 1965 or Atlanta of 1955; in each of these the management of a burgeoning auto population appeared to be, on the basis of sampling public talk, the top urban concern. Despite the realization that Teheran is following in the path of Western or Westernized metropolises, the Iranian urban administrators do not seem to avoid the expensive half-way measures forced upon their city by the ever-growing congestion.

Besides private living space, house style, and automobile, one further index of change is available -- the television antenna. On the roof tops the simple flat loop fixed upon a thin pole shows that the residents value the American programs sponsored by the Armed Forces and the outlets to the world they provide. Quite a few of the antenna are found even in the old city blocks, but there the motivation seems to be that of discovering more about the behavior of foreigners so that they, as merchants and tradesmen, could exploit the richest market in Teheran -- the 30,000 plus foreigners who have congregated in this metropolis. Iranian programs seem to be much less popular -- unless they too endeavor to reproduce the West.

#### The Economic Propulsion System

Without the petroleum Iran would be as poor as Pakistan, and Teheran would be less than half the present size. The per capita income in the metropolitan area would barely have reached \$500 (using the pre-inflation 1972 dollar as a base). Teheran would have lived upon land rents, foreign assistance, the export of rugs and dried fruits, and miscellaneous minor mineral deposits. The income distribution would have been extremely disparate, due to the absolute authority of the Shah and the carryover

of the feudal system. The privileged classes would drive about in V-fronted Mercedes sedans, but the bulk of the population would be limited to bicycles, carts, horse-drawn wagons, Vespa vans (used also as jitneys, as in provincial cities), with mo-peds and Hondas for the middle classes. Two or three commercial centers would be sufficient to supply the requirements of the moneyed elites -- the major one determined by the site selection of the American Embassy a few years before the export of oil from Abadan on the Persian Gulf. These estimates of what might have been are based upon observations and reports from Bangkok, Kathmandu, Kabul, Karachi, and Rawalpindi-Islamabad -- the cities and capitals that have had to make progress by organizing peasant agriculturists and herdsmen.

Instead we see a metropolis with a meaningless G.D.P. per capita level (because of the problem of allocating oil profits in a way that would make sense) but a consumption level that is 40-50% of the American and very close to that of European and Japanese cities. It is a city where inflation is coming under control (retail and wholesale indexes are dropping while world market prices push upwards unevenly) and black markets have little reason to exist. Although underemployment is still endemic to the countryside, the last vestiges of it are expected to be squeezed out of Teheran by the end of 1975. After that, according to the revised Five Year Plan, real increases in consumption level are scheduled to rise at the rate of 10% per year. Thus by the end of the decade, Teheran affluence should pass up Stockholm, the European pacemaker, and start contending with the North American urban settlements -- provided the world trade in petroleum products is maintained at the present levels and prices.

Oil fields are hundreds of miles to the south of Teheran, but major gas deposits are found much closer. The crude oil and refined products are sold to the multi-national companies who distribute throughout the world, but increasingly, national oil companies (such as Indian oil and Hindustan Oil in India) are setting up contracts for direct delivery. The natural gas, on the other hand, is exchanged with the Soviet Union for heavy industrial equipment for steelmaking, heavy machine construction, and chemicals. The receipts flow to the National Iranian Oil Company and affiliates, where a large sum is subtracted for rationalization and manufacture of refined products plus petrochemicals synthesis. The government takes most of the remainder as taxes and distributed profits. It then disburses, according to revised budgets and plans, to the various departments of government. The latter may choose to push the development of infrastructure with its own personnel but usually it will find a willing contractor to help implement the respective priority projects. About 150 overseas firms are said to be among these contractors, so they too are represented in the Teheran directories (which are always incomplete and out of date). Most of the money, therefore, moves through the bureaucratic salaried classes and the higher paid private sector employees (often the same individuals due to the prevalence of moonlighting) into the market. This year quite a large amount was held out and used by the Government to purchase rice, wheat, sugar, tea, frozen meat, and live sheep on the world market and feed these increased supplies into a distribution system with many controlled prices. Families in Teheran pay much less than Europeans for the "necessities of life," other than the automobile.

Because less than 10% of the labor force is engaged in manufacturing, the standard methods for measuring productivity increases in the



regional economy will not work. We have to draw upon a number of indicators, each of them likely to become obsolete within a few years, to discover whether the labor force is responding and getting more work done. One such indicator is found among the self-employed people on the streets -- are their numbers declining and are the remainder better capitalized and more mobile so as to serve their publics more effectively? The answer here is certainly positive, since those that remain are largely illiterate and are often partially disabled. Within a year or two the proportion will be down to metropolitan European levels. Another is the processing time for documents and papers needed to legitimize some transaction. The situation in this respect is very uneven, but no large organizations or agencies seem to be worse than they were last year or the year before (according to verbal reports) but some, particularly at the municipal level, are definitely improving. Another is the possibility of doing business by telephone and mail, so that tasks can be routinized. In this instance the telephone system seems jammed up for a good part of the day, and people report little improvement despite a rapid expansion in the network. Nevertheless, in prospect is a massive increase in the number of lines over the next few years with the most modern exchanges that can be bought (2,000,000 lines for Teheran alone), so a rapid transition is in store. The postal system is more difficult to assess because of the flux in addresses and quite low levels of literacy among heads of families, and much lower levels among mothers.

Finally, if the performance of public services were to be measured by such indexes as student-years of education produced, or the rate of reduction of infant mortality, or vehicle miles managed and regulated, the public services would show rapid rates of improvement. This has

occurred despite (some say it is because of) the loss of the most competent civil servants to the private sector which pays two to four times as much for a marketable competence or skill.

The highest duty of the civil service is to please the Shah; this rule is more true in Teheran than elsewhere. If one fails in this respect he is likely to be moved to some back room, but he may find himself in jail, or under interrogation by the secret police. Just now it is apparent that the Shah insists upon balanced economic development, modernization, reform, and an open international outlook, so without specific instructions the bureaucracy conforms to his expectations. When the signals come loud and clear from the top, the huge amount of effort spent upon bureaucratic infighting is reduced, and agencies begin to compete for attention. Enlarged budgetary allocations normally follow, created by a reputation for performance.

Teheran is therefore becoming a more productive city, generating increasing amounts of income and free services, because it is preparing within its precincts more ways for getting standard tasks done and increasing freedom to choose among them. As a result the high priority project may be completed more quickly, while routine affairs can be handled with the expenditure of fewer man-hours. This enhancement of output is expected even though the injection of revenue from petroleum does not seem likely to expand further.

#### The Forthcoming Full Employment Transition

In the hot, humid coastal desert at the south of Iran the refinery townships and harbor cities have always experienced labor shortages. Teheran was excused from this condition because it did not have a sellers' market like the national oil company, and it possessed a far more attractive

milieu for all social classes. Until this year enough immigration occurred to maintain noticeable levels of underemployment. But now the transition is at hand.

Over the past three years the Government has tried its best to halt immigration. It has greatly improved health, education, transport, and housing services in the provincial towns. It has declared squatting on open land adjacent to the metropolis illegal and subject to police harassment. Now it is setting up consultative centers in the parks to expedite the return to villages and towns of those people who are ambivalent about remaining in the metropolis. The reason given has been the containment of crowding and congestion.

Actually, the effectiveness of such policies for stemming urban settlement is dubious. The efforts were publicized, however, and the concern for the mobile public pleased the Shah, since he was a victim of congestion even if he could evade overcrowding. Nevertheless, if individual immigrants and their families could make a better living in Teheran than at home in the countryside, they were likely to resist the pressures and establish roots within the urban community. Once they had found such a niche in the growing city, it takes a family crisis, or some equally extreme event, to dislodge them from their urban social networks, thus allowing individuals, even families, to return to occupations in the hinterland. Such events are relatively rare, so net migration has proceeded at a rate equal to natural growth (3% per year apiece). Partially educated young people are now most likely to come to the big city to discover whether it is possible to find a job; in the future the young immigrant will have high school education and will be able to hold down a wider range of positions, but he will also have more opportunity near home.

Next year important construction projects will be delayed because they will not be able to find sufficient quantities of unskilled and semi-skilled labor. Experienced people will be offered a big hike in pay. Labor contractors around the bazaar will be unable to deliver the crews that they have in the past. Some will get desperate enough to hire women and pay them a man's wage. At present that happens only at the professional level in the bureaucracy and in the best organized large commercial establishments.

Women still have many obstacles to overcome. Very few, for example, can drive a car. If they do, they find themselves often driven off the highway by aggressive male drivers. Therefore the labor force will be expanded only after employers have found ways of overcoming the inconvenience to the household of having the wife and mother away from home for seven to nine hours a day. Thus the employer, or the city, must improve transport, expedite the commercialization of services previously carried out by maids (laundry, child care, cooking), and reorganize working conditions in the factory or office that previously would have depended upon males. Women are already well represented in the technical training programs, so they need not enter the labor force at unskilled rates of pay.

Other employers who are unwilling or unable to call upon womanpower will invent ways of contracting out to towns and cities that are convenient to Teheran, but still have pools of labor inadequately used. Thus much food preparation, garment manufacture, wood and leather working, and appliance assembly may be spun off from Teheran within a few years. The private sector responds more quickly than the public sector, where credentialism will be in force much longer. However, even for government, demands for reform appear in the press every day ("How silly it is to

require an electrician to have a high school diploma, when what is really required is competence in installing electrical equipment!"). Because women have in the past been allowed so much less education than men, the removal of academic credentials as prerequisites for filling jobs will ease their entry greatly.

Sharp increases in the mixing of social origins, sexes, ages, and skill levels in future organization will require better management. Fortunately the prospective shortage of managers (it has actually been a continuing one) was recognized years ago so that first in the military, and then in both public affairs and businesses training, institutions have already been created which are processing rapidly expanding numbers of candidates. The new managers feel very frustrated now because the entrepreneur and his family repeatedly bypass the posts that are formally responsible, but there will be very few organizations in the 1980s where employees feel personally loyal to the founder and head of the firm or the agency (thus welcoming his intervention), so the ascendancy of the professional manager arrives with the condition of full employment.

The Shah has apparently already made the decision that even if the shortage of labor becomes desperate, Iran will not import workers from nearby countries in the manner of the Common Market countries. In Asia it is too difficult to send them home again. Therefore Teheran does not seem likely to develop a Pathan or Gujerati community which will get the factory work done. The tendency is to employ capital intensive solutions when they are available, and otherwise arrange for the import of fully fabricated products. The result then is a heavy load on the harbor, and long delays in delivery. One response has been the appearance of big cross-country vans, which take two weeks to carry high-valued goods

from as far away as Scotland through Yugoslavia, Greece, and Turkey and across the western border. Sometimes one sees as many as a dozen of these monsters parked on a gravel lot that is designated to become a park. In this manner an increasing amount of the huge oil revenues will trickle out to the West, providing some support to economies facing depression.

Full employment conditions have a selective impact upon the traditional industries -- the handicrafts of a subsistence society. Again the Shah and his court have foreseen the threat and have set up handicrafts training centers to make sure that the arts of rugmaking, tiles, inlays, and woodcarving will not be lost. They are, of course, away from Teheran itself, but the high cost of labor in the future will assure that the export rugs will be unable to compete on the world market, so Teheran will lose its role as a center for the collection and export of rugs, leather, and other traditional handicrafts.

The nearest analog for the future Teheran, then, is Tokyo, which has a dozen years of experience with many jobs chasing a small collection of available workers, with few opportunities allowed for aliens. Tokyo allowed workers' organizations to increase their power and extract ever-increasing wage rises from the employers, reaching a catastrophic peak in 1974 which priced the Japanese out of much of the world market, causing some bankruptcies and a wave of industrial reorganizations. The Japanese economic miracle had stopped working that year. Unions do not really exist in Iran, but in 1960 they were believed to be company dominated in Japan and, therefore, not serious bargaining agents, so the parallel still remains appropriate.

Setting the Stage for the "Great Parch"

Teheran's infrastructure is now being laid out for a metropolis operating at European standards (the decisions were made three to four years prior to the heyday of OPEC) for land use, transport, and water supply. Its population was expected to level off at around 8-10 millions in the 1990s. However, more recently, the hydrologists have reported that the dependable water supply in the watersheds that can be tapped by Teheran is sufficient for only 5 millions and the new reservoir-dam facilities that make this size possible will not be ready before 1978-9, which is about the time that Teheran and its associated new towns will have accumulated five millions, but with so much growth momentum that an equally large number would attempt to join them in the succeeding fifteen to twenty years.

Repeated warnings of an impending water shortage have been issued through the newspapers. If they were believed there should be a sharp drop in the value of land that will be ready for building during the next Five Year Plan (the present one is now approaching the halfway mark). No such fall off in the land market is reported; this can only mean that the bidders for land do not believe what they read in the newspapers. (Note of explanation: In a desert country like Iran or California, the land rents -- which determine land price over the long run -- are primarily a function of the dependability of the water supply guaranteed to the plots, and relatively little related to population potential or building costs as in moist temperate or humid tropic zones.) It does not mean that the new owners can find the water, but that the water shortages of the past have always been brief and tolerable. They do not realize that a 10% annual growth in demand matched against no significant increase in supplies

will quickly create a shortage that exceeds all previous experience. As in every other land speculation craze, the incredible situation pricks the bubble, thus forcing frantic adjustments.

Water is a peculiarly political commodity in Iran. The public works financed by the Shah in this regime and those in the past were dedicated to the supply of precious water to villages, towns and cities. Some of the most unique and extraordinarily skilled hydraulic engineering was involved. The water was the gift of the ruler; he received their devoted loyalty in return. Therefore it is important that water and its fruits be displayed in glistening fountains, rippling lakes, placid ponds, colorful flowers, green lawns, and carefully pruned orchards. To argue publicly that users should pay for the water they receive is shocking. Most people would put it in the same category as heresy, blasphemy, and treason. It is quite proper and modern in concept for land owners to pay something for a connection to a high quality potable water supply, but it is also proper that it be subsidized by the Shah and that an abnormally low rate of interest be charged upon the capital through his good offices. The Shah's approach has always been to find unused water, collect it, and deliver it to his people. Many hundreds of geologists and engineers are prospecting the countryside, and thousands more are designing the distribution systems. All the thinking is in terms of supply, while it is anathema to attempt to control consumption. It is embarrassing to tell other people how the Shah's water should be used, when the patterns for water use have been rendered sacrosanct by long established precedents. However the new explorations, far more comprehensive than their predecessors, are uncovering all kinds of new constraints upon the supplies, most of which have already been tapped.



A modest, conservative scenario can be constructed for the first few years of the "Great Parch." Any of a number of events could provoke a worse crisis, but only the great good luck of a series of increasingly wet years could forestall it.

At the beginning of the year of 1976, 1977, or 1978, it will become evident that the precipitation will be quite inadequate to fill the reservoirs. Water demand will exceed supply by 20-40%. Who should be forced to cut back? High status people at the top of the slope use 500-1000 gallons per day per household, middle status below them about half, while in South Teheran it often falls into the 50-100 gallon range, with much of it spent or spilt outside of the household, but they are living at close to minimum subsistence levels as far as water is concerned. The parks administration within the city is a big user, but it has invested heavily in lawns, trees, and shrubbery which would be lost if not watered. Initially the parks people would agree to postpone their programmed extensions and the new park development. That may save 2-3% of the total. Cooling towers for factories, power plants, and large air conditioning units can be curtailed so that significant savings are possible, but engineers and managers could cheat with impunity, so the prospective 5% might dribble off to two or three. Evaporation losses can be reduced by leaving ponds dry and closing down fountains (except on holidays). That might gain another one per cent. Irrigation of market gardens at the foot of the city could be reduced (the loss in volume of output is made up for by higher prices), and the saving might be as high as five per cent, if water conservation installations were promptly installed. The physical geography of the water sheds prevents evenhanded distribution of irrigation water, so these savings will produce bitter protests.

Nevertheless, the planned reductions are still not enough. Some kind of rationing is needed.

In the spring, when 90% of the precipitation expected for the watersheds to the north has been recorded, a hard decision is required. The enforced cutback in consumption for the remainder of the year must be at least 20%. The recently completed potable water supply system of which Teheran is so proud (the only metropolis between Singapore and Athens so equipped) would be turned off for six hours a day. However, families and businesses learn how to defeat the cutoff. A rotating system is then worked which supposedly cuts off water pressure at unexpected times, but soon it becomes apparent that the fire stations will give the information out for a commission, so that system also loses its effectiveness. In the autumn it becomes apparent that parks-and-grounds and industries must sacrifice. What trees must be left to fend for themselves? What industrial operations must be cut back, shut down, or moved out of the city? Meanwhile, the tubewells were supervised, and appropriate switch-offs of power were scheduled. Nevertheless, the water table drops ominously in some aquifers, and some wells suck air.

All during this period from January to September a huge amount of publicity is given to the shortage and the measures that need to be taken. The residents become tired of the subject and grumble at the impositions of the authorities. They even tire of the scandals about who was getting around the rationing and how. Then the pinch becomes greater. Water in the pipes is cut off half the time. Watering of gardens and lawns is halted in public places. No improvement would be allowed until the first snow in the mountains. A gamble is made by putting the tubewells to work full time, thus mining underground water and borrowing from the future.

From them tankwagons could be filled which could be sent to the distressed areas of the city. If twenty families depend upon a single tap plus whatever flows in the ditches, what can they do when the tap gasps air half the time and the ditch stays dry? They plead through whatever political contacts they have for help, which takes the form of haphazard visits of a tankwagon. The first snows come rather late, on the first of December, so then the rationing system is cranked down, step by step. In the meanwhile the building of houses, offices, and shops on the slope that was completed over the course of the year added 8% to the prospective demand for water, while the new reservoir was delayed due to traffic congestion at the harbor and slow downs in steel and machine production. The economic growth rate is falling well behind Plan, even though Tabriz, Isfahan, and Shiraz are less affected by shortages.

That next season snowfall is virtually normal, yet the shortages come on sooner, and the cuts are far more severe. Many more tankwagons have to be brought into service, serving the fringes of the metropolis primarily. Offices that cannot function without air conditioning swelter or are vacated. The building industry is finally persuaded that the crisis was real, so the level of activity drops below 30% of pre-crisis rates, and potential demand for water increases by only 4%.

Scores of consultants are brought in from all corners of the world to make more water available. The Shah's helicopters are sent out to seed likely clouds, and their success headlined, but somehow no increment in seasonal precipitation is recorded. One theme begins to appear ever more strongly in the reports: water must be reused, but too little was known quantitatively about water uses. Water could no longer be free; it must be metered and its use either justified as necessary or else paid for

at prices determined by its scarcity. Investments need to be made henceforth at the point of consumption so that less water would be adequate for the purpose.

The next few years produce ups and downs in water availability, but mostly the latter. Net migration to Teheran dwindles off to zero. A new kind of water plan is finally prepared. As in Israel it pays attention to vested interests ("grandfather rights") and basic human needs, but a quasi-market could be set up with shadow prices and futures contracts. The city is forced to buy out the options to water held by farmers in nearby valleys and pipe it to Teheran (an alternative previously opposed strenuously by the Ministry of Agriculture). People find ways of saving water because it becomes too expensive or inconvenient not to do so. Arbitrary rationing disappears within several years. Half the trees in Teheran die in the interim; they are also slowly being replaced by varieties that transpire less over the summer months and therefore produce a thinner shade. The details in building design become far more sophisticated in order to bypass the need for air conditioning, and reuse cycles are incorporated at the building, block, or neighborhood level. Because these solutions are not much utilized or thought about in Western countries it takes Teheran, because of its Western orientation, more than a decade to fumble its way to a systematic approach for dealing with water scarcity.

Studies of planning efforts intended to prevent disaster show clearly that even if a scenario such as the above were to be published and distributed widely it is not likely to change the adjustment sequence. It would be competing for public attention with so much conventional wisdom (Western) and folklore (Middle Eastern) that it could not affect decisions. It will take some pretty strong intervening events (virtually

all of them catastrophic) to push Teheran onto another developmental sequence. As pointed out at the very beginning, this is a conservative projection. Worse than average weather might cause net emigration from the region.

#### Other Priorities and Options

Recent revisions announced for the Five Year Plan indicate the kinds of second and third order priorities that can now be attended to because the country is no longer short of capital. One decision was to use the fossil fuel resource as much as possible for products such as fertilizer, petrochemicals, plastics, synthetic rubber, and cement. Thus three refineries with advanced catalytic cracking units were ordered up, and all the new capacity in electric power generation has been based upon nuclear fuel. The projections for steel production have been redoubled (to ten million tons per year). None of these long range decisions directly affect Teheran, but the backup in expanding sectors of the Five Year Plan certainly will.

One of these is a new tripling of the investment rate in communications, most of it facilities for telephone and television. An equivalent increase is registered in housing, where the way is being cleared for the prefabrication and speedy construction of a million dwelling units for government employees, with perhaps 300,000 for Teheran and its new towns. Even bigger than housing, however, is the allocation to state buildings. Architectural firms all over the world are vying for these commissions. Already houses and shops are being cleared away to make room for these monuments to the success of this Shah.

Smaller items, such as Arts and Culture and Public Affairs, are being given substantial boosts. Again the principal stage is Teheran.

That is true also of sports, where the international competitions are increasingly emphasized, and of tourism. Therefore, despite a new added line item, called Provincial Development, the capital will get a lion's share.

The bottleneck in all this acceleration of development is at the port of Khorramshahr on the Gulf. General cargo is routed through it onto the railroads and trucks. The theoretical capacity is 3 million tons per year, but the confusion caused by overloading the organizations in charge and the warehousing area is causing a significant reduction that money cannot quickly solve. For example, one identifiable cause of the pileup was insufficient trucking capacity, so the Ministry of Roads ordered 2,000 tractors with trailers, of which seven hundred have already arrived, but only 70 can be operated for lack of drivers. Many of the remainder are in ships standing off shore waiting in the hot sun to be unloaded. The international shipping lines are so furious they have threatened a 40% surcharge on all freight destined for Khorramshahr. Now everything is being tried at once. The harbor has shifted from a 13-hour day to triple shift round-the-clock operation. Rail connections are being streamlined so that freight trains can go straight through to Teheran. Foreign teams have been brought in to build new berths and cargo space at high speed. Cargo handling, warehousing, and storage are being de-nationalized and turned over to the private sector, which is not at all prepared for the responsibility, but eventually will introduce greater flexibility than the civil service. The three months backlog lying on the ground at Khorramshahr is likely to build up to even greater levels before all the planned measures take effect. The bulk harbor at Bandar Shahpur (wheat, rice, sugar, etc.) is overwhelmed almost to the same

extent, but has transferred enough new supplies to keep prices down in Teheran over the last six months. If the planned 50% increase in handling capacity by 1976 is not achieved the expenditure programmed in the Plan expansion will be proportionately underachieved. The outlets through Turkey and the USSR cannot contribute much added capacity. However the highly professional driver teams from Europe are being inveigled by the Ministry of Roads to make a run down to Khorramshahr to pick up a load for Teheran while agents scrounge for some back haul to Europe. The latter is not easy because general cargo going out of Iran is running less than 20% of what comes in.

The physical constraints upon growth, combined with the shortage of workers, are forcing the institutions to become more open and flexible. The insistence upon formal legal procedures, and the petty corruption associated with them, is breaking down on almost all fronts. The changes are reinforced by public statements of the Shah, who demands results. Even the academic system, one of the last bulwarks of tradition, is changing. Faculties can be reshuffled because so many can do better in the private sector and be used as lecturers instead. Course programs are breaking out of the French tradition as rapidly as those educational processes are being abolished or diluted in France itself. Even the pathway to the University will be transformed next year, with the ordinary high school degree given after three years and the fourth year reserved for preparation for the University entrance examinations. It is hoped that this device will throw some extra hands onto the labor market at a crucial time. In addition, the need to depend upon a large number of contractors from the outside in order to get the jobs done, has introduced a flexibility as to standards and codes, where the eye of the local

counterpart must always be appraising ultimate performance. No longer is the young technocrat likely to be boobytrapped and blackmailed by the devious old-line bureaucrats if ever a shortcut is found and implemented. Even the extreme credentialism of the society is under fire and may be replaced in crucial agencies by demonstrations of performance or by achievement tests.

Superimposed upon an administrative system that has been switched over to a steeper learning curve, is the ambition of the Shah to transform Iran into a major world power, equivalent to Japan and ahead of Italy. Teheran is the backdrop for delegations arriving from all corners of the world, attracted by both oil and the prospects of receiving foreign aid. In addition, the Shah has taken a number of diplomatic initiatives in the OPEC, the United Nations, international conferences, and in world financial circles. So far as I know, none of these proposals has been accepted, even in principle, but other foreign offices and major international agencies respect the careful preparatory work that has been done. The government seems to feel that its credibility is affected by signs of visible dissent at home. Therefore the clamps of the secret police remain very tight and thorough (I was discouraged from walking through the squatter settlements because of the number of questions liable to be raised inside the government), even though an opposition party (Mardom) is being gingerly tolerated and allowed to publish vague criticisms of government policies. Teheran's emergence to the role of host for the movable feast of world diplomacy is being managed much better than its counterpart in Nigeria or Brazil, to mention two other contenders for regional leadership.



### Concluding Comments

This analysis of Teheran's future has been based upon several fairly obvious extrapolations of internal trends. One of them, the building boom, is obviously going to be slowed down by the emergence of full employment. Many residents claim that the slackening is already apparent, because the costs of construction are rising apparently out of control, but an outside observer like myself who sees the volume of construction actually underway and knows what is happening elsewhere in the world, must discount local opinions. Income increases are still more rapid than cost increases in this metropolitan economy. The labor shortage will extend the period of construction over the next several years. The traffic buildup associated with the boom seems likely to be maintained, regardless of the other limitations, since the efforts at amelioration are not keeping up with the willingness to add to the auto population. An excise effectively around 120% does not deter a prospective owner.

The occurrence of the water shortage depends upon random factors associated with meteorological variability. The interaction of the drought with the other constraints has barely been introduced because of the unknown timing. Actually a double crisis -- overemployment and water rationing -- might cause one to counteract the other to an important degree, since jobs in heavy water-using activities could disappear with little cost to the political system. However, if the crises follow in sequence, many political leaders may succumb to the one-two count, mainly because of overcommitments assumed during the first crisis.

Finally, there are implications following from a stretchout of the acceleration in the Five Year Plan. (Nothing has been said here about the

heavy armament program that is part of the acceleration, the dimensions of which seem to be unrecorded publicly in Teheran.) The significance depends upon rates of change elsewhere in the world. If America, Japan, and Western Europe actually experience the recession that is freely predicted now, the somewhat reduced rates of economic and institutional growth in Iran will still seem very good indeed. As compared to the Arabian countries and sheikdoms, Teheran and the regional cities of Iran will appear very solid, since the growth is relatively balanced and becomes more so year by year.

The biggest single risk is continuity of leadership. The Shah gives himself a 50/50 chance of staying on top of the policy-making for twelve years. By that time he hopes to see Iran achieve its rightful place in the company of nations. However, if any of the longer odds political events occur (and they are headlined every week because of their newsworthiness), there exists as yet no shadow cabinet that commands enough respect to set a new course in this direction. The ultra-stability -- some call it inertia -- that advanced Western and Communist societies now have (but which Iran has yet to achieve, and Teheran as a metropolis is not yet equipped to back up), will not be ready soon. All of which means that the crises projected in this assessment, even though they are the product of colliding forces that can be readily gauged, may be overshadowed by still greater crises in the world outside or in Iran itself, which might cause the income stream derived from petroleum to be greatly reduced. My confidence in these extrapolations up to five years hence, as measured by the odds I would ask for a serious gamble, is less than 50/50, when considering all possible futures for the city.

A Postscript on the Environment

The elites of Teheran have become conscious of "the environment." Polite conversation has abandoned talk about the weather in favor of mutually reinforcing comments about the levels of pollution. Bureaucrats have been picked to defend the environment; they have a whole department of their own. So Teheran looks for its worst blemishes and the Mayor is conscious that the most primitive conditions are found in South Teheran. He seems to be making the right moves. (Example: The fringe developments to the city have now been incorporated and legitimized sufficiently to warrant provision of basic urban services.) One of the reasons is that he has been using the advice of Grenville Pullen, a pragmatic townplanner with British training and experience.

I promised to write a brief elementary memorandum, understandable in the Mayor's office, on my suggestions for environmental policy. That memorandum is attached.

MEMORANDUMEnvironmental Improvements for Working Class  
and Squatter Settlements, as in South Tehran

Tehran  
November 1974

by R. L. Meier  
University of California  
Berkeley

Improvements in the urban environment can be identified in two radically different ways. One of these starts from the international point of view, which particularly objects to pollution and disorder in the ambiance. The other is concerned with the "quality of life" of the people who spend their days or nights (or both) in those surroundings. The two outlooks generate the same kinds of proposals when applied to neighborhoods settled by the relatively educated classes, but among poor people these ways of judging faults in the environment yield quite different suggestions for initiating improvements in conditions.

Let us take as an example a community of largely illiterate villagers who now live in illegal brick and mud huts surrounded by abandoned clay pits and brick works. The outsider notices the rutted roads, the garbage in the roadside ditches, dust from a factory making materials for construction, the sparsity of trees (many of them dying), and the tumbledown walls that sometimes border the road. Very few foreigners see these parts of the metropolis (unless perchance, a metropolitan tour wished to show how traditional glassware was blown, molded, and cut by local artisans, as occurred for my wife and I eight years ago -- long before concern about environment was being loudly expressed, even in America -- while today that community has less local market and daytime activity but equal drabness). The persons who object most strongly to a continuation of these conditions are those in Iran who have accepted international standards and wish their capital to be as presentable as any in the world. They are ashamed of the surroundings that have existed since people first settled upon the land and agitate for programs that will put a better face upon these poor communities. Newspapermen are easily recruited to this cosmopolitan point of view, so the points are reiterated in the press.

Turning the area into a park seems to be an ideal solution, but that happens to be doubly expensive, since it takes both capital and a continuing supply of water. Moreover, the people in these parts of the city have little time for parks because they must keep looking for earnings of one kind or another seven days per week. (Interesting studies by the International Labor Office of the United Nations show an extraordinarily high participation in the labor force -- more than 50% of the men, women and boys are helping support the family.) So perhaps two city parks will be enough.

Quality of life considerations start with feelings of irritation on the part of the residents but becomes something much more positive before the improvement task is finished. For example, dust (which sometimes becomes mud) continually disturbs infants, housewives, and elderly people, while everyone can taste the grit in the food. It is worse now because vehicles have displaced animals. A layer of asphalt on the road would be truly welcome.

The water situation is another irritant. The original sources have become clogged or corroded, so the supply is less, or else the population growth has overwhelmed the capacity. There are no convenient places for laundry beside the road, and the ditches are loaded with the wastes of the people living higher in the city. Villages have often spent effort improving the convenience of the water source, but illegal settlements on the fringe of a metropolis have much less incentive. On quite a few occasions the family can only survive by buying water.

The lack of shade causes discomfort for almost half the year. It is needed at the standpipes, the bus stops, the school yard, and anywhere else that people may be forced to stand in the open. Tall, spreading trees would be ideal, but they take too long to grow. Perhaps simple arches and half-domes made of old brick would serve.

Some of the worst, and the best, features of the environment are not visible at all, even though they are felt strongly. The sense of danger or risk is perhaps the most important of these. People in this part of the metropolis are least able to defend themselves against bullies and criminals; they seem always to be victims. Those who are strong enough and intelligent enough not to be prey to unlawful elements tend to move upslope to more stable communities, leaving behind a population with a high proportion of multi-problem families. One of the best features is that the public clinics are not very far away (as compared to village conditions), and the most unhealthy aspects of the environment (e.g., malaria, typhoid, etc.) are now speedily eliminated by public health authorities.

A sense of community and a readiness to cooperate is exceedingly important to the achievement of a satisfactory quality of life. The neighborhood feels that it is at least in partial control of its destiny. These positive features are not created by gifts from the government, because the people then must assume the role of beggars, or else wait patiently for something to be decided by those who control the treasury. Thus, although asphalt is needed to lay the dust and fill the potholes, it should not be granted without conditions. Communities must be engaged in self-help.

An example may perhaps communicate better than the description of method. People need more water outlets, and the city can find the pipes and the water. Can the community describe a water facility that will be convenient for all users (drinking purposes, food preparation, laundry, small scale manufactures, etc.)? The city should insist that the water should not be wasted, because it will become very scarce, so provisions must be installed for reuse. The waste water could be used to supply a tiny park. How would the neighborhood plan it and maintain

it, so that the councilman could bring visitors and show it to them? If the neighborhood did not have a name it is important that it agree upon one and place it on the little park. If there is a mini-park a city architect could be assigned to design some shade. The nearby houses and walls will need to be fixed up. Whitewashing is the least that could be done, but the architect might be able to suggest a color scheme that the people would approve. But if this happens the garbage thrown into the ditches will seem inappropriate. So the city must provide waste cans, but people must train their children to use them. Thus step by step, through negotiation between the people and the authorities, the environment can improve. Even some of the crime moves elsewhere, so the risks are reduced. The people must feel that they are giving as much as they are receiving. This relationship can reach such a level that platoons of school children sweep the alleys clean every morning, placing all the waste in a receptacle, as in equivalent neighborhoods of Seoul, Korea. Then even the poorest housing looks neat and tidy, and the ditches run sweet-smelling down the slope. When this approach is completely successful the children will be training the parents, because the school becomes a key link in the ultimate stages of environmental improvement.

It will be noted that most features of the cosmopolitan view of the decent urban environment evolve from this approach, but they are achieved indirectly. If one should try to install the improvements by central decision, they would fall into disrepair and decay very quickly, so the overall appearance would be that of neglect, unless huge amounts of maintenance were poured into the projects. The best way is a cooperative approach with major efforts made in getting government coordination. Some Asian countries (Singapore, Korea) are more effective than Americans and Europeans in using such techniques.