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Houston Business

A Perspective on the Houston Economy

Rethinking the Space Station: NASA and the Houston Economy

Cancellation of the space station project would be a serious blow to the scale of operations at JSC, forcing significant local job losses and spending cuts. Looming behind the immediate question of cancellation or cutbacks is an even more important, longer term issue for JSC: the future of manned space flight if there is no space station for the shuttle to build and service.

A space station, romanticized in *2001: A Space Odyssey* as a giant spoked wheel that slowly turns against the backdrop of Earth, is to its proponents the next logical step in American space exploration. Many think President Kennedy should have chosen a space station rather than a one-shot venture to the moon as the feat to recapture the U.S. lead in the 1960s space race. The Air Force planned a manned orbiting laboratory in the 1960s but lost out to competition from *Skylab*, a project of the National Aeronautics and Space Administration. To date, *Skylab* has been the only U.S. space station project not be canceled, but its objectives were sharply curtailed by budget cuts. Ultimately, only three missions flew to *Skylab* in 1973; it was abandoned in 1974 and crashed to earth in 1979.

President Reagan revived the space station concept, promising "a permanent presence of man" in space. A January 1984 budget request called for $8 billion to build a space station. Three years later, NASA released plans for a $16 billion space station. By early 1991, the General Accounting Office estimated the station's construction costs would be close to $40 billion, with operating costs of $80 billion over a 30-year life. This growing price tag made the space station a tempting target for federal budget cutters. Now the new administration, trying to reduce federal spending and imposing new taxes to curb a growing budget deficit, has ordered a complete review and redesign of the space station in an effort to preserve its scientific benefits while sharply cutting costs.

In Houston, the future of the space station is more than just another public policy issue. The Johnson Space Center in Clear Lake is NASA's lead

facility for manned space flight. Space shuttle operations, astronaut training and the space station constitute its major activities and funding sources. Cancellation of the space station project would be a serious blow to the scale of operations at JSC, forcing significant local job losses and spending cuts. Looming behind the immediate question of cancellation or cutbacks is an even more important, longer term issue for JSC: the future of manned space flight if there is no space station for the shuttle to build and service.

NEW TAXES AND SPENDING CUTS

Houston could be caught up in a number of the Clinton administration's proposed new taxes and spending cuts. The local economy can be described as comprising four growth poles: the administrative, technical and manufacturing complex that supports a global search for oil; the downstream refining and petrochemical complex along the ship channel; the Texas Medical Center; and the Johnson Space Center. Proposals for a broadly based tax on energy, especially with a 130 percent higher tax rate on oil, would hurt upstream and downstream energy operations. Combine this scenario with prospects for ongoing health care reform and a review of the space station project, and many questions arise about Houston's economic future.

The status quo is always comfortable, and economic change is often scary. But the Clinton proposals should bring Houston benefits as well as losses. Local benefits might stem from the broader goal of federal deficit reduction and stronger national growth. A seemingly credible and conservatively estimated plan to reduce (if not eliminate) the deficit has already brought important reductions in long-term interest rates. If uncertainties—from domestic politics to international events—don't impair the proposed deficit reduction plans, the stimulus from lower interest rates could offset much of the fiscal drag that spending cuts and new taxes inevitably will impose on the national economy.

Will Houston benefit from a stronger national economy? The answer is clearly yes. Houston has always been responsive to national economic conditions, although the relationship has often been disguised by volatile oil markets. Indeed, the national economy's local role has grown with recent diversification, and strong national growth has been a key to Houston's revival from the oil bust. However, in contrast to specific local spending cuts or energy taxes, the macroeconomic benefits to Houston are diffuse and difficult to pinpoint. Indeed, the politics of the federal budget deficit revolve around exactly this issue: local resistance to spending cuts or new taxes when only broad and problematical national benefits are offered in return.

NASA AND THE JOHNSON SPACE CENTER

Less than a month after NASA's creation in 1958, the new agency formed the Space Task Group to manage Project Mercury and put man into space. In 1961, the task group was reformulated to handle all manned projects, renamed the Manned Spacecraft Center and located about halfway between Houston and Galveston. Later renamed the Johnson Space Center (JSC), it rose to the status of other key NASA facilities: the agency headquarters was in Langley, Va.; the Jet Propulsion Laboratory in Pasadena, Calif., did tracking and telemetry in deep space; the Marshall Space Flight Center in Huntsville, Ala., developed rockets; the Goddard Space Flight Center in Greenbelt, Md., was the space science center; and Cape Canaveral (now the Kennedy Space Center) in Florida handled launch operations. The role of all these centers has evolved and shifted over time, but the Johnson Space Center remains responsible for planning, organizing and training for manned space flight.

THE JOHNSON SPACE CENTER AND HOUSTON

The space station project substantially increased NASA funding. Unlike past programs, which typically were phased in to replace completed projects, the space station needed continued shuttle operations. Space station funding was added to JSC's existing shuttle operations budget. New obligational authority for JSC was $1.54 billion in 1985. Without the space station, it would have been $1.89 billion in 1992; with space station funding, the budget jumped to $2.83 billion in 1992.

JSC spends just under half its budget in Houston. Since space station funding began in 1985, the share of JSC budget spent locally has risen from 40 to 46 percent. Most JSC spending in Clear Lake and Houston is for employment, with over 90 percent of the budget for wages, salaries and benefits. JSC employment of civil service, prime contractors and other direct contractors jumped from 11,960 in 1985 to 17,000 in

1991. Local procurement of goods and services in Houston reached $102 million in 1991 but was only 8.1 percent of local spending, or 3.7 percent of JSC's total budget.

Many visitors to JSC remark that the facility looks like a college campus, with a quadrangle area, duck ponds and colonnaded walkways. Its economic impacts are also similar to those of a college, with a high proportion of spending tied to wages and salaries for a highly skilled and educated work force. Local procurement is tied mostly to institutional operations.

Robert F. Hodgin at the University of Houston at Clear Lake has exploited this analogy by applying a well-known model of the economic impact of colleges and universities to JSC.[1] The model is quite conservative in estimating impacts, going to some lengths to avoid controversy, and if it errs it is probably on the side of missing multiplier effects in the local community.

Hodgin's figures show that the space station added 4,500 jobs and $189 million in personal income to the Clear Lake area last year. After the multipliers are accounted for in the model, the space station is responsible for 13,200 regional jobs and $350 million in personal income throughout the Clear Lake–Houston area. The incremental jobs produced through the multiplier process are much less well-paid than those affiliated directly with JSC, presumably because they are dominated by retail and part-time work. The conservatism of the model in estimating multiplier effects may play a role as well.

The economic impact of canceling the space station would center on the Clear Lake area. About 26 percent of the Clear Lake labor force works in aerospace—that is, mostly JSC-related activities. The remainder is divided into local petrochemical (10 percent), tourism (25), marine (2), and those who use Clear Lake as a bedroom community (36). Hodgin's figures show that space station cancellation would entail a population loss of 10,000 for Clear Lake, with attendant negative impacts on retail sales, retail and office space, the housing market and school enrollments. The current slow growth experienced throughout the Houston area would exacerbate the problem, leaving residents to ask where new jobs would come from to replace lost space station jobs.

RETHINKING THE SPACE STATION

The scientific panel now reviewing the space station concept will soon submit its final report to the National Space Council and Vice President Gore; a decision from the administration is expected early this summer. A favorable decision will put the project before Congress. Some reduction in resources is certain; how cutbacks will be shared among NASA's various centers depends on the final design selection.

Diverse and incommensurate priorities shape the space station debate and make the outcome impossible to predict. For example, with the end of the Cold War, there is not a strong military impetus to maintain technological superiority in space flight. The Russian's Mir space station did not provoke an urgent U.S. response, such as Mercury or Apollo. Another consideration is the economic value of the station as a service base for satellite repair, material processing, military or weather observation. These services were touted highly in early space station proposals, but their value is now swamped by recent cost estimates.

Also shaping the debate is the long-running feud between advocates of manned space flight and those in the scientific community who see little or no science involved in putting man into space. Robots, it is claimed, can do the science required, and manned space flight is belittled as an engineering stunt. One reply, of course, is that when expensive experiments in space don't work, an astronaut might be capable of making repairs. Also, the commercial spinoffs from NASA in various coatings, fasteners, purification systems and imaging are the work of engineers, not scientists. Now mix into the debate national prestige, international cooperation, the excitement of space exploration, and pork-barrel politics, and the shape of the new space station becomes even more uncertain.

Space station funds were crucial to Houston's economic recovery from the oil bust. They contributed to the rapid growth the city enjoyed from 1987 to 1991 and to local economic diversification. JSC now faces a likely reduction in this funding, and we will soon learn the extent of the damage. A resumption of strong growth at one of Houston's other growth poles will be needed to make repairs.

[1] John Caffrey and Herbert H. Isaacs (1971), *Estimating the Impact of a College or University on the Local Economy* (Washington, D.C.: American Council on Education).

Wage and salary employment improved sharply over the first three months of 1993, and seasonally adjusted data reveal that Houston has returned to the peak levels of employment enjoyed in mid-1991. Some combination of skepticism and caution is required in interpreting these data, however. Skepticism is warranted because early data for each of the previous three years showed gains that later vanished after data revisions by the Texas Employment Commission. Analysis also requires caution because of the mix of jobs that make up these apparent gains. Mining, durable manufacturing and other export sectors continue to decline; new jobs are concentrated in retail, services and especially local government. Beige Book responses are consistent with continued slow-to-flat economic conditions in Houston.

RETAIL AND AUTO SALES

Retail sales were generally reported to be running slightly better than 1992, despite heavy rains and flooding that slowed business in March. March auto sales were excellent, up 24 percent over March 1992, but April sales tailed off to lag April 1992 sales by 12 percent. Figures for March are a small part of the annual total for local auto dealers and can be volatile, but April begins the strongest period of the sales year. April, May and June sales are crucial determinants of annual sales volume.

OIL AND GAS PRICES

OPEC continues to maintain production cuts that are holding oil prices $1 higher than a year ago. National gas price futures hit record high levels on the heels of blizzards along the East Coast. For the second consecutive year, late cold weather boosted natural gas prices after the heating season was officially over and storage had already been depleted. Replenishing stored fuel over the summer should keep prices high for several months.

Weather—warm weather, cold weather and Hurricane Andrew—has largely driven gas prices for two years, but many analysts are now forecasting that the increase in natural gas prices will be sustained. Except in the Gulf of Mexico, where drilling is up sharply, higher gas prices have yet to stimulate oil-field activity. The domestic rig count hovers at record low levels. Many producers, burned by similar optimism about gas prices in 1990–91, have adopted a wait-and-see attitude about natural gas prices and increased drilling.

CHEMICALS AND REFINING

Gasoline prices, showing a seasonal climb, have hit the highest levels so far this year. This price increase—normal for the summer driving season—began earlier than usual this year. Refiners' margins have risen over the past few weeks, along with gasoline prices, but the improvement is from extremely low levels seen throughout the early spring. Petrochemical operations continue to show little increase in demand, and prices are flat. Chemical margins are squeezed by rising prices for hydrocarbon inputs. Few construction projects are on the immediate horizon for either chemical producers or refiners.

REAL ESTATE

Inventories of existing homes continued to grow through March, with active listings up 7 percent from last year. Sales were similarly off 7 percent, as many potential buyers are now taking more time to decide, convinced that interest rates are down for awhile. In contrast, new home sales were up 7 percent, according to one report, and optimistic builders pushed March starts up 14 percent from March 1992. March is an important month for starts, as builders try to get product on the ground for spring sales. Strong traffic in model homes early in the year was important in driving these new starts.

Otherwise, Houston real estate has changed little. Rents and occupancy are flat in the apartment market. Office space remains stable and rents flat for most of the market, but downtown continues to see rents and occupancy decline.

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