

AN ASSESSMENT OF ARIZONA'S ECONOMIC COMPETITIVENESS

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SUMMARY

Regional economic competitiveness is a function of many factors, the most important of which are the quality and availability of the workforce, the quality and availability of infrastructure, and costs. Labor costs are most significant; the tax burden is relatively unimportant.

Education is a significant factor in determining the quality of the workforce. In recent decades, those growing up in Arizona have compared unfavorably on educational attainment and achievement. This weakness has been offset to some extent by an ability to attract workers from outside the state, in large part because of the state's climate and physical environment. Recruiting workers from out of state adds to business costs. The ability to attract a workforce should not be taken for granted in coming years.

Pieces of the physical infrastructure — airports and electrical power generation — are positive attributes in Arizona, but surface transportation has been a shortcoming. Infrastructure needs in coming years will be substantial, resulting from the state's fast growth and the need to replace or refurbish aging infrastructure.

Arizona has a competitive advantage with its relatively low labor costs. Other business costs, e.g. real estate and utilities, also are favorable. However, as the world's economy has shifted in recent decades, the importance of business costs has declined. For those economic activities that are highly cost conscious, the United States cannot compete with countries such as China and India. For other companies, costs are relatively less important than the other location factors.

Over the last two decades, Arizona's politicians have taken considerable action to reduce taxes. However, most of the tax cuts have been to individual taxes, which have little effect on economic development. Arizona now has a very low individual tax burden. In contrast, business taxes as of 2012 range from comparatively low for small unincorporated businesses, most of which serve the local population and do little to drive economic growth, to high for large industrial businesses with considerable personal property.

Due to legislative actions over the last two years, the business tax burden will decline significantly between fiscal years 2014 and 2019. Incentives also have been enhanced.

These tax reductions/enhanced use of incentives will remove \$645 million (nominally) from the state government's general fund. This comes on top of \$1.6 billion (nominally) in tax cuts over the prior two decades, which amount to nearly \$3 billion when translated to today's economy. As a result, spending already has fallen sharply and is below the national norm; spending on education is among the lowest in the nation. Because of the new tax cuts, public spending will need to decline further the next time economic growth slows. The erosion of revenue will prevent the state from providing its historical level/quality of public services and infrastructure.

Thus, while the recent packages of business tax reductions and enhanced incentives taken individually will boost competitiveness, this will be offset by an inability to provide the public infrastructure and services needed by businesses. To achieve a net gain in competitiveness, public revenues will need to be enhanced by raising the tax burden on individuals, which is very low relative to ability to pay, historical levels, and the burden in other states.

BACKGROUND

In order to evaluate Arizona's economic competitiveness and performance, several fundamental economic realities must be understood. For a more expansive discussion of such factors, see "Roadmap to Arizona's Economic Recovery," January 2010, <http://economist.asu.edu/public-finance>.

The Economic Cycle

Nationally, the economy follows a cycle in which a period of economic growth that typically lasts from a few to several years is followed by a recession (a contraction in the size of the economy) that usually lasts from several months to a little more than a year. The growth phase frequently is split into two parts: (1) a recovery from the losses experienced during the recession, which generally takes only months to complete, and (2) an expansion.

Arizona's economic growth follows a cycle that is very close in timing to the national economic cycle. Like other fast-growing states in which construction and real estate — highly cyclical activities — are a disproportionately large share of the economy, Arizona has one of the most cyclical economies in the nation. Aggregate growth, as measured for example by gross domestic product or employment, is much faster in Arizona than the national average during economic expansions, but Arizona's economy may decline by as much or more than the U.S. average during recessions.

While aggregate growth receives the most attention, gauges of productivity and prosperity, such as gross domestic product per employee and per capita income, are better indicators of economic competitiveness and performance. Productivity growth leads to gains in prosperity: the ultimate economic goal. Productivity and prosperity measures also rise and fall cyclically, with gains in Arizona typically a little greater than the national average during expansions but with declines larger than average during recessions. On net, Arizona's economic performance based on productivity and prosperity measures has been mediocre for decades, with the state comparing less favorably to other states than it did during the 1970s and early 1980s.

The last economic cycle, which ran from the end of the prior recession at the end of 2001 through the end of the latest recession in 2009, was unusually extreme nationally and especially in Arizona. Following a slow start in 2002 and 2003, the economy boomed from 2004 through 2006. Arizona experienced its fastest aggregate growth in history during these years, though its gains in productivity and prosperity were typical. The boom turned into a recession that began at the end of 2007 and lasted into the summer of 2009 nationally and into 2010 in Arizona. This was the longest and deepest downturn since the Great Depression of the 1930s, measured both by aggregate and prosperity measures.

The recovery from the last recession has been slow. Given the magnitude of the losses during the recession, a recovery back to prerecessionary levels is only partially complete nationally years after the end of the recession. The recovery is especially slow as measured by employment and unemployment. Though the pace of growth in Arizona since late 2010 has roughly matched the national average, the state has much further to go to regain its prerecessionary level. Moreover, in prior cycles, Arizona's growth was much faster than the U.S. average two or more years after the end of the recession.

Drivers of Economic Growth

A significant dichotomy exists in the nature of economic activities in any region. Relatively few companies sell the majority of their goods and services to customers located outside the region, but these companies form the region's economic base and are responsible for the health and growth of the regional economy. Such activities — variously called “export,” “tradable” or “basic” — import money into the state and thereby “drive” the economy. In contrast, most companies predominantly sell their goods and services to local residents and local businesses. These “population-serving” activities respond to conditions within the economic base and do not cause economic growth.

Few economic activities sell wholly to customers outside the local area or entirely to local residents, but in some cases, the customers are predominantly one or the other. Classic tradable activities include many manufacturing, mining, and agricultural activities that have a high percentage of sales made to customers from outside the local area. Other activities that primarily import money into a region rather than sell to local residents include tourism and some services, such as call centers of a national company serving a market area greater than the local area.

A few tradable activities, such as a copper mine, are location specific but many, such as most of manufacturing, can locate anywhere since their customers are spread out across the country or the globe. In contrast, largely nontradable economic activities are location specific since they sell their goods or services to local customers.

To illustrate the relationship between tradable and nontradable activities, consider the extreme case of a community that is wholly dependent on one tradable activity. Historically in some mining towns, the output of the mine has been the sole tradable product. No one lived in the area until the mine began to hire workers. While the mine was operating, a variety of nontradable activities sprang up to serve those employed at the mine. When the mine closed, the mine's employees left the town and the businesses engaged in nontradable activities immediately lost most of their customers (all except those individuals working at other nontradable activities). A community cannot survive by selling goods and services to each other because “leakages” inevitably occur — local dollars leave the community to purchase goods and services not available locally. Without a means of importing money into the community to offset these leakages, the nontradable businesses in a former mining town eventually shut down, resulting in a ghost town.

Regional economic development interests do not need to be concerned about attracting companies to serve local residents and businesses. If an unmet demand is present, a company will fill the opening without any intervention from local governments or economic development agencies. (However, cities within a metro area compete with each other to attract companies serving the local population in order to receive the tax benefits of the economic activity. This competition is unhealthy from the perspective of the metro area.) Regional economic development focuses on tradable activities since communities located outside the region — in other states or in other nations — are competing to become the home of these tradable activities.

However, not all export industries have an equal effect on the regional economy. The wage level is one important distinction. A low-paying base industry such as tourism has a much lesser

impact per employee than does a high-paying base industry, such as high-technology manufacturing. A second practical distinction is the industry's prospect for growth. Some base industries are unlikely to be a source of future growth. Mining, for example, is limited by dwindling natural resources. Many of the mature manufacturing industries have limited growth prospects.

The Effects of Public Policy on Economic Growth

The media and the public are quick to blame politicians during periods of economic malaise. For example, the re-election bids of Jimmy Carter in 1980 and George H.W. Bush in 1992 were derailed in large part by economic conditions. Similarly, politicians frequently take credit during periods of economic growth. In reality, politicians — and public policy in general — have little effect on economic conditions in the short term. State and local governments in particular have few tools with which to influence near-term economic conditions. Basic economic forces, particularly as manifested in the economic cycle, are far more powerful than public policies.

In recent years, considerable attention was given to government actions to stimulate the economy. The federal government has some ability to stimulate the economy during a recession. Unlike state and local governments, the federal government can run a deficit and therefore can increase public spending without increasing taxes or other revenues. It did that in recent years, particularly with the American Recovery and Reinvestment Act (ARRA) passed in 2009. In addition, the Federal Reserve Board has a variety of tools that can be employed to battle a recession. It continues to aggressively use the tools at its disposal. The recession would have been longer and deeper than it was had the federal government not taken these actions.

The most effective way to have a fast impact on the economy is to increase public spending for the purpose of building physical infrastructure, such as roads. (See “Creating Jobs in Arizona by Building and Renovating Physical Infrastructure,” October 2011, <http://economist.asu.edu/public-finance>.) As money is released to construction and related businesses deeply impacted by the recession, people are put to work and in turn increase their spending. All sectors of the economy benefit.

ARRA included substantial monies for infrastructure projects. However, given the poor evaluations of the nation's existing physical infrastructure, very considerable needs remain.

State and local governments as well as to the federal government can engage in infrastructure building. Indeed, it is the only way in which a state or local government can have a meaningful impact on the economy in the short term. Like nearly all capital projects, the funding for such a stimulus program comes from long-term debt financing. However, this tool was little used in Arizona in recent years to combat the recession, despite a backlog of infrastructure projects previously identified as needed.

In the longer term, a larger number of public policies can influence economic performance. The public policies that most affect economic performance are those that directly affect the location factors most important to businesses.

Location Factors and Economic Development

A region must be economically competitive to become more prosperous. Competitiveness is determined by a long list of regional attributes (location factors), sometimes collectively referred to as the business climate. Economic competitiveness is necessary for all three forms of economic development: attracting companies to move to the region, encouraging existing companies to remain and expand in the region, and fostering new businesses.

The regional factors deemed most important vary by company and by industry. Yet most rankings of location factors do not distinguish between the many kinds of export activities. The most important factors considered by the average company when looking to move or to locate a new facility includes

- The quality and availability of the workforce.
- The quality and availability of the physical infrastructure. Transportation — airports and surface transportation — and utilities are most often mentioned.
- Cost factors. Labor costs are the most important of the cost factors, but tax burdens, real estate costs, and energy costs all are common considerations. Once a region has been selected as a finalist in a company's site selection process, the availability and flexibility of incentives often makes a difference.

Other regional attributes of importance include the availability of land and buildings and the regulatory environment.

Some of the important location factors, such as labor and real estate costs, are largely beyond the purview of public policy. In contrast, the public sector is largely responsible for the transportation infrastructure and public education; the latter is a significant contributor to workforce quality. While taxes can be an important location factor, they must be evaluated in the broad context that they are the price paid for the public infrastructure and public services that are important to businesses.

The list of important location factors can be very different for the high-paying, high-technology industries that are expected to lead the nation's economic growth during the 21st century. Within these industries, the list of factors important in siting a headquarters or research and development (R&D) facility can be quite different from the most important factors in locating a manufacturing plant or some other type of facility.

In order to distinguish between the different industries and different types of facilities, economic development experts in the Phoenix area were polled regarding what they believed to be the most important factors (see "Site Selection Factors Vary Widely by Economic Cluster," *Arizona Business*, November 2000). They were asked to differentiate between the type of company facility and were asked to list the factors most important to each of eight export industry clusters that either were already of particular significance in the Phoenix area or were a target for future growth. The selected clusters were aerospace, bioindustry, call centers, environmental technology, plastics, software, transportation, and "high tech" (other than the high-tech clusters mentioned specifically, and including electronics). Each of these clusters was selected either in the original Arizona Strategic Planning for Economic Development effort during the early 1990s or shortly thereafter. Several, but not all, of these clusters are high paying and are heavy users/producers of technology.

In general, the most important factors for both headquarters/R&D facilities and manufacturing/other types of company facilities were labor costs, the availability of a skilled workforce, and educational opportunities and quality. For manufacturing/other types of facilities, the cost of utilities and the airport infrastructure also were rated very highly, though neither of these even made the list of important factors for headquarters/R&D facilities.

Several other factors also were considered to be important. Those on the list of both headquarters/R&D facilities and manufacturing/other facilities included the availability of land and leased space, the telecommunications infrastructure, and the education infrastructure. The proximity to universities and research centers also was on the list for headquarters/R&D facilities. For manufacturing/other facilities, land costs and lease rates, power and water availability, and regulations also were considered to be important.

Notably lacking from this listing are business taxes and incentives. Each was considered to be important for certain types of facilities in some clusters, but overall was not considered to be as important as the factors mentioned above for the selected clusters. Also notable is that two of the three most important factors to all types of facilities are related to education: the availability of a skilled workforce, and educational opportunities and quality (important to the company as a component of a skilled workforce and important to the company's employees as a component of their quality of life). Two additional education factors were considered to be important: the education infrastructure and proximity to universities and research centers.

ASSESSMENT OF ARIZONA'S COMPETITIVENESS

Public assessments of the state's business climate have ranged from good to poor. The methodology employed and the weighting of the importance of the various location factors account for the wide variation. Low labor costs and the state's natural attractions (climate and landforms) help offset the state's mediocre or worse evaluation on most of the other factors.

Quality and Availability of the Workforce

Evaluations of the workforce are dependent in part on the types of jobs being created. Workforce quality is less important in an economy with a disproportionate number of low-skill, low-wage jobs than in an economy built on high-skill, technological jobs.

Educational attainment and achievement are important aspects of the quality of the workforce. The public sector has a large role in determining how a region compares on these factors. Experience and skills learned after leaving school also are important, but are more difficult to evaluate and are less influenced by public policies (though public job training programs play a role).

Arizona compares poorly on the educational attainment and achievement of those who obtained their education in Arizona. The deficiencies extend across Arizona geographically and by racial/ethnic group, but are most severe in rural areas and among Native Americans and Hispanics. Though not the only cause of the deficiencies, the very low public educational expenditures per student in Arizona (nearly the lowest in the nation for K-12 schools and below average for higher education) contribute. In the first half of Arizona's statehood, educational spending per student was above the national norm and the educational attainment of Arizonans was above average. As spending declined relative to other states, so did the relative attainment of the state's residents.

The substandard educational quality of those educated in Arizona has been partially offset by the historical ease with which employers have been able to attract workers from elsewhere in the country. However, long-distance hiring adds to a company's costs. Further, the attractiveness of the state to workers elsewhere in the country will not last forever. The increasing size of the Phoenix area will lead to greater urban disamenities and more difficulty attracting workers.

Quality and Availability of the Physical Infrastructure

Some aspects of Arizona's physical infrastructure compare favorably. Utilities, particularly electrical power generation, are a positive. Phoenix Sky Harbor Airport also rates favorably. In contrast, surface transportation is perceived negatively.

The assessment of the education infrastructure is mixed. The universities and community colleges are highly regarded and the numerous community college campuses are a plus, but the state has relatively few university campuses. The K-12 infrastructure is assessed less positively — not because of a lack of facilities but because some of the facilities are deemed to be inadequate to prepare students for life in the increasingly technological 21st century.

Even for those components of the physical infrastructure that currently compare favorably, coming needs are great. (See "Preparing for an Arizona of 10 Million People: Meeting the

Infrastructure Challenges of Growth,” November 2008, <http://economist.asu.edu/p3/competitiveness>.) The state historically has struggled to keep up with population growth. In addition, as the state ages, so does its physical infrastructure, increasing the need for costly rehabilitation or replacement of existing infrastructure. Most of the physical infrastructure is the responsibility of the public sector.

Cost Factors

In general, costs are of more significance to mature industries that are less technologically dependent and pay lower wages. The United States, and each of its states, cannot compete for these industries on the basis of cost, with competition now coming from countries such as China and India. In the past, Arizona attempted to attract cost-sensitive operations but that strategy is no longer viable, even though the state’s labor costs are less than the national average. Instead, Arizona and the rest of the country in the 21st century must compete based on innovation and the development of new and better technologies. Because of this, education and research and development have become particularly important factors in determining the economic competitiveness of a region. The importance of cost factors has declined over time.

Public policy cannot have much influence on labor costs, the most important cost factor. Similarly, most other costs, such as for real estate and energy, are predominantly set by the private sector. However, the public sector does collect taxes and other revenues, which represent the price of public goods and services. The use of incentives by the public sector affects the revenues collected from businesses.

Taxes and Incentives

Taxes receive considerable attention in Arizona despite their small impact on the economy. For perspective, all state and local government taxes combined account for less than 2 percent of operating income for the average business. Moreover, taxes merely represent the price paid for government services consumed. Thus, the issue really is whether businesses pay a disproportionate share of the taxes collected relative to their utilization of public services and infrastructure.

The overall tax burden in Arizona currently is below the average of the states. (See “The Tax Burden in Arizona,” May 2009 <http://economist.asu.edu/public-finance>.) The overall comparison is a function of a very low individual tax burden and a burden on businesses that ranges from low to high, depending on the nature of the business. In general, very small unincorporated businesses have a low tax burden relative to counterparts in other states. This low burden has little positive effect on the economy since few small businesses are part of the economic base; similarly, the very low individual tax burden has little positive effect on the economy. In contrast, large industrial companies with considerable personal property — which make up a large share of Arizona’s export base — have a high tax burden relative to counterparts in other states. These businesses pay a relatively high price for their consumption of public services and infrastructure.

The overall tax burden in Arizona is lower than it was historically. This primarily results from nearly two decades of individual tax reductions, but business taxes also have been lowered over

this period. In nominal terms, the tax reductions implemented between the early 1990s and the current time sum to \$1.6 billion. The cumulative effect of these state government individual and business tax reductions, adjusted for inflation and the state's population growth, total nearly \$3 billion per year. As a result, public spending has declined; state general fund spending has dropped from a historical average of about \$49 per \$1,000 of personal income to around \$35.

Further business tax reductions passed by the Arizona Legislature in 2011 and 2012 will not begun to phase in until fiscal year 2014, but will result in a significantly lower business tax burden once they are fully implemented. Including associated measures such as tax credits, an additional \$645 million (in nominal terms) will be removed from the revenue stream by fiscal year 2019.

The legislation of 2011 (HB2001 from the second special session) was far ranging. A reduction in the corporate income tax rate is expected to result in a \$270 million reduction in revenue when fully implemented in fiscal year 2018. The phase-in of an increase in the corporate sales factor will cause an additional \$84 million reduction in corporate income taxes. Combined with smaller reductions in property taxes, corporations — currently disproportionately taxed — will realize substantial tax relief. (Individuals also benefit from the legislation due to an increase in the homeowner's rebate percentage.)

The 2011 legislation also transformed the Arizona Department of Commerce into the Arizona Commerce Authority, with a focus on economic development. The availability of incentives intended to help companies decide to move to, or expand operations in, Arizona was expanded, including a "deal-closing" fund and a credit for job creation. Unlike the tax reductions, these went into effect in fiscal year 2012.

The legislation passed in 2012 (HB2815) primarily affected the income tax. The main feature is a reduction in long-term capital gains. Tax credits also were expanded. Subsidies can flow to some businesses that have no tax liability due to transferability of the credits.

The record in Arizona and elsewhere across the country is that tax reductions have a measurable impact on economic performance only under certain conditions. A basic requirement is that a tax rate is high and is lowered enough to bring it to a competitive level. While reductions in uncompetitive business taxes can have a significant impact, the effects from reductions in personal taxes are modest.

Though Arizona's tax burden has been reduced significantly over the last two decades, most of the reductions were to personal taxes that were not out of line before the reductions took effect. Thus, no measureable positive effect on Arizona's economic performance can be found from the tax cuts, even before the onset of the recent recession, which was much more severe in Arizona than nationally.

The business tax reductions passed in the last two years have the potential for a greater economic effect. However, they have not begun to phase in and companies can take years to make a relocation/expansion decision. Thus, it is unrealistic to expect a company to have already made a relocation/expansion — a process that typically takes years to complete — based on recent

changes in tax rates. Moreover, it is not likely that the new incentives have had a significant effect. That Arizona's economic recovery is proceeding only at the pace of the nation despite deeper declines during the recession is evidence that any positive effects from the legislation of the last two years are in the future.

Other Factors

Various other factors are important to companies, though it should be remembered that their significance in most cases is much less than the major factors of labor quality/availability, infrastructure quality/availability, and labor costs.

The availability of land generally is not an issue in Arizona. Though private land represents a small share of the total, state lands that can be converted to private land are numerous. In the Phoenix area, however, the sheer size of the area means that most of the available land is far from the core of the metro area.

The regulatory environment is important to some economic activities, particularly manufacturing. Generally, the state compares favorably in this regard.

Companies — at least those employing highly educated and well-paid individuals — are concerned more generally with the quality of life that a place provides. This is important in attracting and retaining workers, so it has a direct link to the success of a company in a particular location.

Arizona has long been attractive to workers because of its perceived high quality of life. This perception has been heavily tied to the state's climate and physical environment. Most other aspects of the quality of life are at best mediocre in Arizona. In some components, conditions are deteriorating in the Phoenix area — in which more than 70 percent of the state's economic activity occurs — as a result of the area's large and increasing size. Moreover, more educated individuals generally are more discerning regarding the quality of life, taking into consideration educational quality, crime, transportation services, and a variety of other factors. Thus, Arizona cannot expect that its natural amenities of climate and landscapes will continue to be enough to attract companies and workers.

OUTLOOK

Without considering the recent tax/incentive legislation, most economic forecasts issued over the last several years have been consistent in expecting economic growth to accelerate over the next few years, by more in Arizona than nationally. International conditions, such as the debt situation in Europe, represent the major risk to this forecast — the performance of the national economy is very much affected by international conditions. Arizona's economy also is influenced by international conditions, but is particularly tied to the national situation.

The length of the expansion is always difficult to predict but it is likely to last several years from its onset in 2009 or 2010. The economy is unlikely to regain its 2007 level before 2014 (or even 2015 in Arizona). The expansion inevitably will end in another recession.

Despite the end of the temporary sales tax in mid-2013, public revenues may be adequate for the current low levels of spending for a few years, since Arizona's highly cyclical economy is likely to boost public revenues over the next few years. But as population and business growth picks up and places added demands on public services, as the tax packages of the last two years are phased in, and as the economy begins to slow, the inadequacies of the existing revenue system will become obvious. Another public finance crisis is likely in the next economic downturn.

The recently passed reductions in business taxes and enhancement of incentives likely will help the state attract and grow cost-conscious, lower-wage economic activities. As has been the case over the last two decades, the additional public revenue collected from enhanced business activity will fall far short of offsetting the hundreds of millions of dollars of lost revenue resulting from the recent legislation, and the enhanced activity will lead to greater demand for public services.

The effect of the recent legislation on other types of economic activities is not as clear since public revenues are used to provide infrastructure and services needed by businesses. The recent business tax reductions were not offset by revenue increases elsewhere, meaning that public revenues will decline. Further, these tax cuts and enhanced incentives come after nearly two decades of substantial state government revenue reductions and spending cuts. As a result, the public sector no longer has the resources to provide the infrastructure and services that it previously provided. For the higher-paying, higher-technology businesses expected to lead future growth and that highly value public infrastructure and education, the recent legislation could have a net negative effect.

In order to improve productivity and prosperity in Arizona, then the recent legislation must be accompanied by programs to improve education and workforce skills and to increase the quality and availability of the physical infrastructure. Arizona's public sector will have to spend far more than the current levels in order for the state to be competitive.

Arizona has considerable capacity to modernize its sales tax base or to restore a portion of the reductions in personal taxes in order to raise additional revenues to provide needed public services. The individual tax burden in Arizona is very low, compared to the ability of its residents to pay, its historical levels, and the current tax burden in other states.

Without additional actions to improve the state's economic competitiveness, the economic future of Arizona will be much like its past: The economy will follow a highly cyclical course that causes dislocations during every down cycle and will be marked by subpar job quality, inferior wages, low workforce participation rates, and below-average incomes.