

Potential Impacts of Reducing the Size of Puerto Rican Government Employment

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- Government employment in Puerto Rico is excessive, and it is likely that a reduction of the government work force could be obtained without a reduction of services. The positive impact on output and income could be substantial.
- A 10% reduction in the government work force could yield an increase in GDP of roughly 1.7% – about \$1.5 billion.
- Combining the reduction in the work force with an equivalent 10% reduction in tax rates could yield an increase of GDP of roughly 3.6% – about \$3 billion.
- Changes of this magnitude could be phased in over a four year period without layoffs, based simply on normal attrition. The estimates obtained with the Puerto Rico computable general equilibrium model of phasing in the changes over four years are shown below:

Impact of Improvements of Labor Efficiency in the Government Sector Combined with Equivalent Tax Rate Reductions – Percentage Changes from Year 0

	Year 1	Year 2	Year 3	Year 4
Reduction of gov employment	2.5%	5.0%	7.5%	10.0%
Reduction of tax rates	2.5%	5.0%	7.5%	10.0%
Change of GDP	0.924%	1.839%	2.747%	3.649%

Two hundred and eighty thousand people are employed by the Commonwealth government of Puerto Rico and by the municipal governments on the island, accounting for over 22% or more of total employment. In the fifty states, by way of comparison, state and local government employees make up on average only about 14% of total employment.

It seems reasonable to conclude that there is excessive employment in the public sector of Puerto Rico and that government employment could be reduced without a reduction of government services – though some reorganization would be required to obtain the greater efficiency. The resulting benefits to the overall economy could be substantial. More relatively highly skilled (i.e., highly educated) workers would be

available for employment outside the government, and output and incomes could be accordingly increased.

The Puerto Rico computable general equilibrium (CGE) model allows investigation of the impacts of improvements of efficiency in the government sector. The CGE model indicates that an increase of productivity in government activity – a “shrinking” of the Puerto Rican government’s employment without a reduction of services – could have a significant pay-off in terms of increasing GDP. For example, a 10% efficiency increase in government activity (releasing 10% of the government labor force for other activity) results in an increase of GDP of about 1.7%. That is, GDP would rise by about \$1.5 billion.

If the improvement in productivity were accompanied in by a reduction in tax rates, the impact on GDP would be even larger because there would be positive impacts from both the greater government efficiency and the stimulatory effect of lower tax rates. For example, when the 10% improvement in efficiency is accompanied by a 10% reduction in tax rates (corporate, income, and indirect tax rates), the CGE model indicates that GDP would increased by 3.6% – about \$3 billion.

The reason that efficiency increases in the government sector alone could have such a large impact on overall output is that the Puerto Rican government employs a very large share of the labor force but contributes a smaller share to value added. In other words, productivity in government activity is relatively low. Therefore, the improved efficiency in government allows workers to be shifted to higher productivity activity in other sectors of the economy.

A 10% reduction in government employment could be implemented over a relatively short time without layoffs. Normal annual attrition in government employment is about 3.3% (assuming the average length of government employment is 30 years). Even with a reasonable amount of “back-fill” in vital positions, government employment could be reduced by 2.5% a year over a four year period without lay-offs. The results then obtained from the CGE model are shown in the two tables below:

The CGE model also indicates that an additional result of increased government efficiency would be a reduction of the overall price level. The 10% efficiency improvement alone leads to a 1.1% reduction in the price index. In the model, as workers move out of government employment and are available for employment elsewhere, the wages in other sectors of the economy tend to fall. (However, overall labor income rises as a result of more output and more people working in the private sector.) Also, in the model, as workers move from government to the private sector, overall productivity rises. The fall in private sector wages and the overall productivity increase lead to the fall in the price index. This price reduction, in turn, has positive impacts on the demand for exports and on demand for domestic products as opposed to imports. When the 10% efficiency improvement is combined with the 10% reduction in tax rates, the reduction in the price index is much greater – about 4.4%. In reality, there is little reason to think that prices would actually fall as the model indicates. However, the forces that are at work in the model do have their counterpart in reality, and improvement in government efficiency and reduction of tax rates would decrease upward pressure on prices.

Table 1: Impact of Improvements of Labor Efficiency in the Government Sector – Percentage Changes from Year 0

	Year 1	Year 2	Year 3	Year 4
Reduction of government employment	2.5%	5.0%	7.5%	10.0%
Change of GDP	0.437%	0.868%	1.295%	1.718%

Table 2: Impact of Improvements of Labor Efficiency in the Government Sector Combined with Equivalent Tax Rate Reductions – Percentage Changes from Year 0

	Year 1	Year 2	Year 3	Year 4
Reduction of government employment	2.5%	5.0%	7.5%	10.0%
Reduction of tax rates	2.5%	5.0%	7.5%	10.0%
Change of GDP	0.924%	1.839%	2.747%	3.649%

With the high unemployment rate in Puerto Rico it is of course possible that, were government employment reduced due to efficiency improvements, one of the results might be an increase of unemployment. (Indeed, one of the political pressures creating the high level of government employment is surely the perception that limited job opportunities exist elsewhere in the economy.) However, a negative employment impact is likely to be limited. Government employees tend to be relatively well educated and well educated workers have lower rates of unemployment. Many would likely be absorbed in other forms of employment. Also, if the greater government efficiency made government resources available for other purposes – through lower taxes – the impact on total employment could be positive.

The aggregate figures suggest that there are opportunities for large improvements in productivity in the Puerto Rican government and that these improvements could have far reaching positive impacts on the Puerto Rican economy. Greater efficiency in government could release resources – both labor and revenues – that could be used elsewhere in the Puerto Rican economy, contributing to an expansion of output and income.

Some qualifications of this analysis are in order:

First, part of the reason that government employment in Puerto Rico is so much higher than state and local government employment in the states is that some activities in the public sector in Puerto Rico are in the private sector in the states – some public utilities for example. Also, some of the functions that are performed for the states by the federal government are performed in Puerto Rico by the Commonwealth government. These different practices, however, can explain only a part, probably a small part, of the extent to which the rate of government employment in Puerto Rico exceeds that in the states.

Second, there are conflicting official data on employment in Puerto Rico. The series based on the household survey has been used here, yielding the 22% figure for the share of total employment in the Commonwealth and municipal governments of Puerto Rico. The series based on the establishment survey, however, yields a significantly higher share of employment in the government sector – 28% instead of 22% – both because it shows more employees in government service and because it shows a smaller figure for total employment. By using the smaller figure, the central point of excessive government employment is based on a more conservative foundation. If the higher figure were more accurate, it would imply an even greater excess, and it would probably be easier to reduce the government work force without some loss of services. In any case, the impact estimates obtained from the CGE model would not be altered by the difference between these two series.

Third, the impacts of government efficiency gains and tax reductions have been reported here in terms of the resulting changes in GDP because it is an all-inclusive measure of economic activity. In particular, GDP includes economic activity taking place in Puerto Rico but attributable to external entities (especially firms based outside of Puerto Rico but active in Puerto Rico). However, GNP, which excludes economic activity attributable to external entities, would be a better measure of the well-being of the Puerto Rican people and Puerto Rican firms. The impact of the changes in government efficiency and tax rates on GNP as well as GDP are shown in Tables 1A and 2A below. In terms of the qualitative nature of improvements in government efficiency and tax reductions, the results are similar in terms of GDP and GNP, although the impacts on the latter are smaller.

Table 1A: Impact of Improvements of Labor Efficiency in the Government Sector – Percentage Changes from Year 0

	Year 1	Year 2	Year 3	Year 4
Reduction of government employment	2.5%	5.0%	7.5%	10.0%
Change of GDP	0.437%	0.868%	1.295%	1.718%
Change of GNP	0.376%	0.748%	1.117%	1.483

Table 2B: Impact of Improvements of Labor Efficiency in the Government Sector Combined with Equivalent Tax Rate Reductions – Percentage Changes from Year 0

	Year 1	Year 2	Year 3	Year 4
Reduction of government employment	2.5%	5.0%	7.5%	10.0%
Reduction of tax rates	2.5%	5.0%	7.5%	10.0%
Change of GDP	0.924%	1.839%	2.747%	3.649%
Change of GNP	0.592%	1.173%	1.745%	2.310%

Fourth, in the discussion here, it has been assumed that the efficiency improvements in government would be used to reduce the government work force without reducing services. Thus tax rates could also be lowered. It is possible, however, that greater efficiency in government could be used to increase services without increasing the work force and without reducing taxes. For example, government

operating at the same level (in terms of total work force and taxes) but with greater efficiency could improve the island's infrastructure – traditional physical infrastructure, social infrastructure (e.g., schools), and modern information technology infrastructure (e.g., high speed connectivity). Moreover, if the improvements of government efficiency were obtained and tax rates were not lowered, the induced growth of the economy would yield larger government revenue that could be used for these increases in government services.

Fifth, the quantitative results from any model, including the CGE model, must be viewed as very rough. Moreover, the CGE model is based on old data that do not fully reflect the current structure of the Puerto Rican economy. Nonetheless, the basic qualitative results obtained from the model are meaningful, and the quantitative results can be viewed as “rough orders of magnitude” of the impacts of the changes that are being examined.

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The Computable General Equilibrium Model for Puerto Rico was constructed by Professors Nazrul Islam and Glenn Jenkins and has been revised by Professor Arthur MacEwan.