

Chapter 2 The Rise and Fall of the CNMI Economy

1. Introduction

After years of rapid growth, the economy of the Commonwealth of the Northern Mariana Islands (CNMI) is now contracting at an alarming rate. The immediate cause of the decline has been the loss of 15,000 jobs in the apparel industry, which has been unable to compete with low-wage garment producers in China. The CNMI lost its competitive advantage when China became a member of the World Trade Organization in December 2001 and was granted duty-free access to U.S. markets in 2005.

Adding to the distress of the CNMI economy over the next few years will be the adverse consequences of “federalization.” Mandated by Congress, this policy will gradually raise the minimum wage and restrict the use of foreign labor in the CNMI until they conform to mainland standards. This could have a devastating effect on the tourist industry, because approximately 70 percent of its workers are non-U.S. citizens. Federalization could also preclude any meaningful economic recovery in the foreseeable future.

The objective of this study is to document the rise and fall of the CNMI economy. Following a brief comment on methodology, the study is divided into four parts: (1) an analysis of the growth of the CNMI economy between 1980 and 2005, focusing on the roles of the apparel and visitor industries; (2) an assessment of the 2004-07 contraction precipitated by the shutdown of the garment factories; (3) projections of the CNMI economy under two alternative sets of assumptions regarding federalization and its impact on the visitor industry; and (4) a discussion of the potential obstacles to future economic growth, specifically federalization, the financial viability of government, outmigration, and foreign investment.

The study draws upon the analysis of the CNMI economy conducted by the authors in 1999 (“An Economic Study for the Commonwealth of the Northern Mariana Islands”). In particular, the current study makes use of the 1995 input-output model constructed for the 1999 study. Despite the passage of time, the input-output model continues to be a useful tool for portraying the structure of the CNMI economy, explaining its past growth, and forecasting its future, as evident in the following analysis.

2. Methodological Note

Data

It is important at the outset of this study to say a few cautionary words about the data and the input-output model used in the analysis.

Studies of the CNMI economy related to the impact of federalization have been conducted in 2008 by the U.S. Government Accountability Office (“Commonwealth of the Northern Mariana Islands: Managing Potential Economic Impact of Applying U.S. Immigration Law Requires Coordinated Federal Decisions and Additional Data”) and the

U.S. Department of Labor (“Impact of Increased Minimum Wages on the Economies of American Samoa and the Commonwealth of the Northern Mariana Islands”). Both agencies pointed out that their ability to conduct a thorough study was hampered by the scarcity of economic data. In the words of the Department of Labor (page 35), “the information vacuum continues to be an obstacle to an objective and comprehensive assessment of the economy and its productive capacity.”

Building the requisite data base for an analysis of the CNMI economy is challenging but not impossible. The principal task is reconciling information from disparate sources. For example, the estimates of employment used in this study are constructed from five data sources: the economic census; W-2 reports; the census of population and housing; the household, income, and expenditures survey, and various industry and government tabulations. Two other important data sources used in this study are the CNMI income and product accounts (Rubin, 2007) and a quarterly publication of the Department of Commerce entitled “Economic Indicator.” A list of the primary data sources can be found at the end of this report.

As with virtually all economic data, the estimates made in this study are subject to measurement error. Nevertheless, taken as a whole, the information presented here paints a pretty clear picture of where the CNMI economy has been and where it is headed.

Input-Output Model

The 1995 input-output table built for the 1999 analysis of the CNMI economy serves three purposes. First, it is a set of accounts that shows transactions among industries, government, households, and the external sector. In this respect, the input-output table portrays the structure of the CNMI economy and provides important measures of economic activity, such as Gross Domestic Product. Second, the input-output data constitute the factual basis for estimating long-run output, income, and employment multipliers. Used in impact analyses, multipliers are estimates of how the economy responds to a change in the activity of an industry, such as an expansion or contraction of its exports. Third, when augmented with final demand and population sub-models, an input-output model can be used to prepare economic and demographic projections.

Rather than constructing a new input-output model, which was an infeasible task due to time constraints, this study has resurrected the 1995 model. One concern is whether the model, which is now thirteen years old, is outdated. The central issue has to do with the temporal stability of the apparel and visitor industry multipliers derived from the model. As long as the multipliers continue to be relatively constant over time, the model remains an effective tool for analyzing the growth of the CNMI economy as well as for preparing economic projections.

As the following analysis shows, the long-run multipliers apparently have been fairly stable over time. In light of the relatively simple structure of the CNMI economy, this finding is not surprising. It is also consistent with the results of earlier research on the stability of input-output models (Conway, 1977 and 1980). Nevertheless, the results of

the analysis (i.e., the economic impacts and projections) should be viewed as “reasonable estimates” rather than exact measures.

Additional information on the input-output model and its application to impact analysis and forecasting can be found in the 1999 study by the authors (Malcolm D. McPhee and Associates, October 1999).

3. The Rise of the CNMI Economy

Period of Rapid Expansion: 1980-1995

The ability of the CNMI to sell goods and services to people and businesses beyond its borders is a key determinant of its economic growth and welfare. Conceptually, economic activity can be divided into two parts: basic activity and non-basic activity. Basic activity brings new money into the economy and supports non-basic activity (principally, activity in trade, services, and local government) through the multiplier or re-spending process. Basic activity can take many forms, including merchandise exports, tourism, military facilities, and retirement communities. Such sources of new money are critical to the health of the economy. Indeed, without basic activity the economy would wither and die.

Table 1
CNMI EMPLOYMENT AND POPULATION

	1980	1995	2005	Average Annual Percent Change	
				1980-95	1995-05
Employment	5,420	32,760	35,960	12.7	0.9
Population*	17,440	58,130	70,200	8.4	1.9

*Mid-year estimate.

In 1980, two years after the establishment of the Commonwealth, the CNMI economy was small and undeveloped. According to the population census taken in that year, 17,440 people lived on the islands (Figure 1 and Table 1).¹ There were 5,420 jobs, implying that the economy was “fully employed.” However, relatively few people worked in basic (export-producing) activities. About four-fifths of the jobs were in

¹ The estimates of population and employment for 1980, 1990, and 1995 are slightly different than those shown in the 1999 study. In the current study, population is a mid-year estimate based on April 1 counts—as well as counts at other times—reported by the Census Bureau. The employment series have been reconstructed to be consistent with the employment estimates published in the economic census for 2002, the last year for which there are reliable employment data by industry.

Figure 1
CNMI EMPLOYMENT AND POPULATION

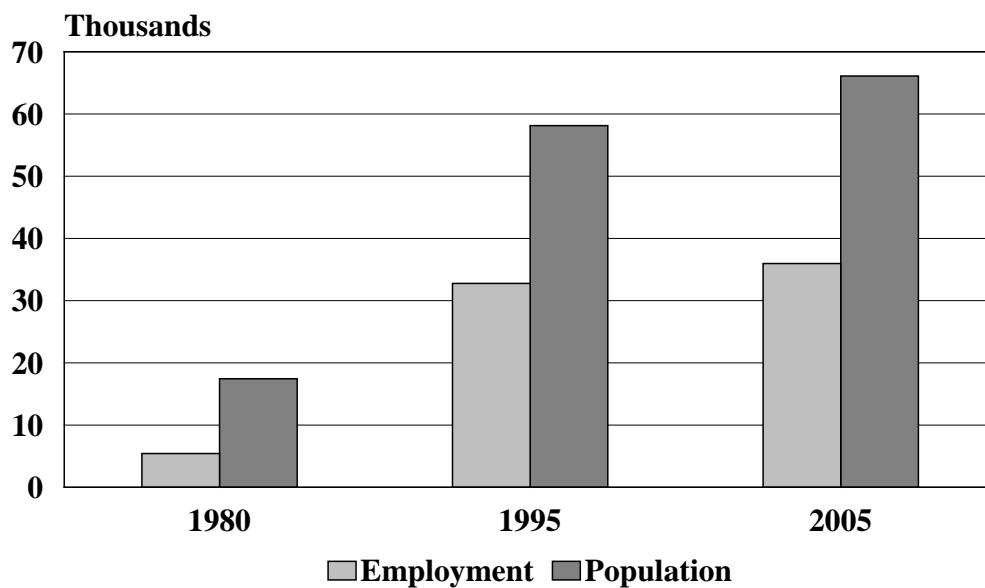
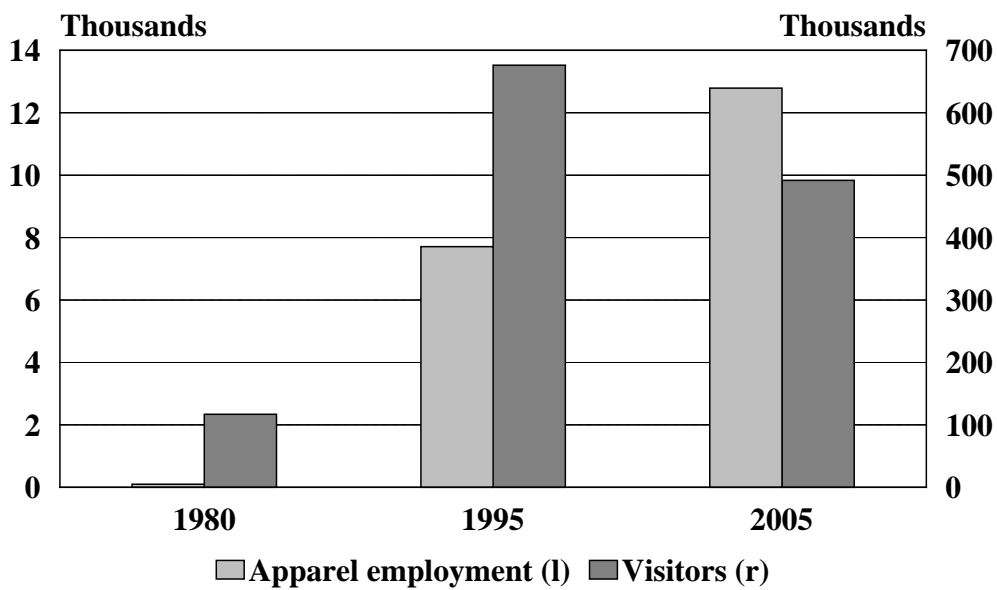


Figure 2
CNMI APPAREL EMPLOYMENT AND VISITORS



non-basic sectors, including construction, retail and wholesale trade, services, and government (public administration and education). In contrast, there were only 110 jobs in manufacturing and fewer than 1,000 jobs in the visitor industry.²

Over the next fifteen years, because of the rapid expansion of the visitor industry and the establishment of a highly successful apparel industry, the economic landscape of the CNMI changed dramatically. Between 1980 and 1995, the number of tourists and other travelers to the CNMI increased seven-fold, rising to nearly 700,000 and boosting visitor industry employment to an estimated 9,570 (Figure 2). At the same time, the number of jobs in the apparel industry climbed from almost nothing to 7,710.

After surging at an average annual rate of 12.7 percent, one of the highest growth rates in the world, CNMI employment reached 32,760 in 1995. During this fifteen-year period of rapid expansion, the economy added 27,340 jobs, of which approximately 16,280 were in basic industries (8,570 in the visitor industry and 7,710 in the apparel industry) and 11,060 were in non-basic sectors, including government. Presuming that the economy was driven primarily by the visitor and apparel industries, the implied employment multiplier during this period was 1.68 ($=27,340/16,280$).³

The expansion of the CNMI economy was made possible by a four-fold increase in population, much of it due to a wave of migrants from Asia looking for work. After advancing at an average annual rate of 8.4 percent for fifteen years, CNMI population hit 58,130 in 1995. By then, nearly one-half of the population was foreign workers, many of them employed in the visitor and apparel industries.

Indicative of the vastly improved economy, the CNMI employment rate (total employment as a percent of total population) rose from 31.1 percent in 1980 to 56.4 percent in 1995. This helped boost average household income from \$12,859 to \$29,946, a 139.2 percent gain, according to census money income estimates. The average income of households headed by Chamorros went from \$11,464 to \$39,750, an increase of 244.2 percent. Adjusted for inflation, the income of all households increased 10.9 percent. But the income of Chamorro households jumped 65.1 percent.⁴ Clearly, the economic boom left the residents of the CNMI much better off.

Five factors accounted for the rapid expansion of the CNMI economy between 1980 and 1995: duty-free access to U.S. markets, which was granted as part of the Covenant; CNMI's attractiveness as a tourist destination; use of inexpensive foreign labor; federal

² The CNMI had other sources of new money that supported the economy in 1980. These included the federal government, which helped pay for government operations and capital projects, and outside investors, who financed private construction.

³ In this case, the employment multiplier is measuring the total jobs created in the economy between 1980 and 1995 per new job in the basic sector.

⁴ Household income is deflated by the CNMI consumer price index to obtain an estimate of real household income. Historically, the consumer price index has overstated inflation, which is evident by comparing the U.S. consumer price index with the U.S. deflator for personal consumption expenditures. Thus, between 1980 and 1995, real household income in the CNMI most likely increased even more than these calculations indicate.

financial aid to expand infrastructure; and openness to outside investment. With regard to low-cost foreign labor, perhaps the key to the economy's success, the CNMI had local authority over immigration and the minimum wage, although the federal government could have revoked it at any time by an act of Congress.

Structure of the CNMI Economy

As noted previously, the principal tool of analysis in the 1999 study of the CNMI economy was the 1995 input-output table. Among other things, it displays the structure of the economy in considerable detail. It reported, for example, that personal consumption expenditures (\$373.4 million) accounted for 46.9 percent of CNMI Gross Domestic Product (\$796.7 million).⁵

The composition of Gross Domestic Product (GDP) reveals the high degree to which the CNMI economy depends upon external trade. In 1995, visitor expenditures, apparel exports, and other exports amounted to \$962.1 million or 120.8 percent of GDP. By comparison, exports accounted for only 11.0 percent of U.S. GDP. On a per capita basis, CNMI exports were more than five times greater than U.S. exports. Of course, this kind of dependency is a two-edged sword, since it implies that many of the forces determining the fate of the CNMI economy lie beyond its control.

The multipliers derived from the input-output model are summary measures of an industry's impact on the economy. A multiplier is defined as the ratio of the industry's total impact to its direct impact. There are three principal types of multipliers: (1) an output multiplier (total dollars of output generated in the economy per dollar of output in the industry); (2) an employment multiplier (total jobs generated in the economy per job in the industry); and (3) an income multiplier (total labor income generated in the economy per dollar of labor income in the industry). Labor income includes wages, salaries, proprietors' income, and other labor income (non-wage benefits).

Table 2
APPAREL AND VISITOR INDUSTRY MULTIPLIERS, 1995*

	Output Multiplier	Employment Multiplier	Income Multiplier
Apparel industry	1.32	1.50	1.80
Visitor industry	1.34	1.79	2.10

*From 1995 CNMI input-output model.

⁵ While a strict comparison cannot be made, it appears that the estimates of personal consumption expenditures and Gross Domestic Product in the 1995 input-output table are somewhat lower than what one would expect based on the 2000-05 estimates published in the recently completed CNMI income and product accounts. Much of the difference stems from the fact that the 1995 estimates exclude the imputed value of rent for owner-occupied housing and the imputed value of products for self-consumption.

According to the input-output model, the apparel industry employment multiplier in 1995 was 1.50 (Table 2). Noting that the multiplier includes the original job, this meant that each apparel worker supported the equivalent of 0.50 other jobs in the economy.

The visitor industry employment multiplier was 1.79 in 1995. The visitor industry multiplier was higher than the apparel multiplier primarily because the visitor industry makes greater use of local labor. On average, local labor earns a much higher income than foreign labor. Local labor also tends to spend a greater share of its income in the CNMI economy.

Multipliers can be used to measure the contribution that an industry makes to the economy (Table 3). The apparel industry employed 7,710 workers in 1995, including both local and foreign labor. Taking into account its indirect impact on the economy, the industry supported 11,570 ($= 1.50 \times 7,710$) jobs. This represented 35.3 percent of the Commonwealth's jobs.⁶

The visitor industry is not a single industry. Rather it is a collection of industries, such as hotels and lodging and eating and drinking places, that serve tourists and other travelers. In 1995, an estimated 9,570 people were employed in the visitor industry, including 950 in transportation services, 1,420 in eating and drinking places, 1,880 in other retail trade, 2,520 in hotels and lodging, and 2,620 in other services, according to the input-output data. Taking into account its multiplier effect, the visitor industry supported 17,120 ($= 1.79 \times 9,570$) jobs or 52.3 percent of total CNMI employment.

Table 3
EMPLOYMENT IMPACT OF APPAREL
AND VISITOR INDUSTRIES, 1995

	Apparel Industry	Visitor Industry
Industry employment	7,710	9,570
Employment multiplier	1.50	1.79
Total employment impact	11,570	17,120
Percent of CNMI employment	35.3	52.3

Together, the apparel and visitor industries accounted for nearly nine out of every ten jobs in the economy. The remaining jobs were supported by other exports, federal expenditures and transfer payments, retirement income, and remittances.

⁶ The estimated fraction of the economy dependent upon the apparel industry in 1995 is higher than that reported in the 1999 study. This is due to a reduction in the estimate of total CNMI employment in 1995.

The Two-Tiered Economy

Another noteworthy feature of the CNMI economy is the extent to which it relies upon foreign labor (Table 4). In 1995, two-thirds of the working population consisted of foreign workers, mostly guest workers from the Philippines and China. Foreign workers constituted nearly three-fourths of the employment in the visitor industry. In contrast, the CNMI government employed primarily U.S.-qualified residents.⁷

Table 4
CNMI EMPLOYMENT AND AVERAGE ANNUAL LABOR INCOME
BY SELECTED INDUSTRY AND RESIDENCE STATUS, 1995

	Employment	Percent of Industry	Average Annual Labor Income
Apparel industry	7,710	100.0	\$9,440
U.S.-qualified residents	510	6.6	24,560
Foreign workers	7,200	93.4	8,370
Visitor industry	9,570	100.0	\$10,550
U.S.-qualified residents	2,650	27.7	20,190
Foreign workers	6,920	72.3	6,860
Other industries	10,460	100.0	\$10,480
U.S.-qualified residents	2,790	26.7	21,130
Foreign workers	7,670	73.3	6,610
Government	5,020	100.0	\$27,850
U.S.-qualified residents	4,810	95.8	28,650
Foreign workers	210	4.2	9,520
Total	32,760	100.0	\$12,917
U.S.-qualified residents	10,760	32.8	24,423
Foreign workers	22,000	67.2	7,292

As a result of a large number of foreign workers, the CNMI economy has developed a two-tiered structure. The upper tier is comprised of high-wage workers, most of which are U.S.-qualified residents employed in government and various private businesses. The

⁷ In the 1999 study, permanent residents referred to people who had a right to live permanently in the CNMI. They included U.S. citizens, Freely Associated State citizens, and U.S. green card holders, among others. Temporary residents referred to people who had no such right. Since this terminology is confusing in the context of U.S. immigration law, the remainder of the paper will instead use the terms U.S.-qualified residents (permanent residents) and foreign workers (temporary residents).

lower tier is comprised of low-wage workers, most of which are foreign workers employed in the apparel and visitor industries.

In 1995, the average annual labor income in the CNMI was \$12,917. But the income of U.S.-qualified residents was more than three times that of foreign workers. On average, local workers earned \$24,423 per year, compared to only \$7,292 for foreign workers.⁸ While the incomes of foreign workers were well below the average income, they were high compared to what the workers would have earned back home.

Table 5
EMPLOYMENT IMPACT OF APPAREL AND VISITOR INDUSTRIES
BY INDUSTRY AND RESIDENCE STATUS, 1995

	U.S.-Qualified Resident Employment	Foreign Worker Employment	Total Employment	Percent of Industry Employment
APPAREL INDUSTRY				
Apparel	510	7,200	7,710	100.0
Other manufacturing	50	140	190	14.8
Wholesale and retail trade	210	380	590	10.2
Other industries	500	1,540	2,040	15.7
Government	990	50	1,040	20.7
Total	2,260	9,310	11,570	35.3
VISITOR INDUSTRY				
Hotels and lodging	580	1,990	2,570	98.1
Eating and drinking places	220	1,380	1,600	88.9
Wholesale and retail trade	1,060	1,670	2,730	68.9
Other industries	2,470	6,070	8,540	65.7
Government	1,610	70	1,680	33.5
Total	5,940	11,180	17,120	52.3

*Includes eating and drinking places.

The labor income of U.S.-qualified residents, especially those employed in government, approached mainland standards. The \$28,650 average annual income of the 5,020 government employees was fourth-fifths the average labor income for all workers in the United States (\$34,690). Considering the CNMI's short history as a market economy and

⁸ Because of data revisions, these estimates are close but not equal to those given in the 1995 input-output table.

its geographical isolation, the high incomes of U.S.-qualified residents was a remarkable achievement.

The two tiers of the economy are distinctly different but very much interdependent. Most U.S.-qualified residents owe their high-wage jobs to the apparel and visitor industries, which in turn rely on low-wage foreign workers (Table 5). In 1995, of the 7,710 persons directly employed in the apparel industry, only 510 (6.6 percent) were U.S.-qualified residents. But, as a consequence of its indirect impact on the rest of the economy, the apparel industry supported an additional 1,750 jobs held by U.S.-qualified residents in the economy, including 990 jobs in government. Directly and indirectly, the visitor industry supported 5,940 jobs for U.S.-qualified residents in 1995.

Altogether the apparel and visitor industries provided 8,200 jobs for U.S.-qualified residents. This represented 76.2 percent of the 10,760 jobs held by U.S.-qualified residents in 1995. Thus, the loss of these two industries would have a calamitous effect on not only foreign workers but also on local workers in the CNMI.

Period of Maturation: 1995-2005

While the 12.7 percent employment growth rate between 1980 and 1995 was extremely high, it was not unusual for a “take-off” economy, one in its early stages of development. Palau, for example, experienced a similar growth rate at about the same time. Moreover, as history has shown, these high growth rates are not sustainable in the long run. As predicted in the 1999 study (page 32), “the CNMI economy will slow down or even fall into recession.” In fact, signs of moderating growth were already evident between 1990 and 1995, as the average annual employment growth rate slipped to 6.7 percent.

Unlike the period of rapid growth (1980-95), in which the CNMI economy advanced on all fronts, the period of maturation (1995-05) saw a twenty-year expansion give way to recession (Table 6). Indeed, as the years unfolded, it became increasingly clear that the loss of the apparel industry due to its inability to compete with Chinese garment factories could lead to depression.⁹

Growing at a 4.0 percent annual rate, the CNMI economy added slightly more than 7,000 jobs between 1995 and 2000. Although this was still healthy growth, the economy began to develop cross-currents. The apparel industry put another 9,070 people to work, more than doubling its payroll. The visitor industry created 2,780 new jobs.¹⁰ But the economy was held back by a sharp decline in construction activity.

⁹ A depression is a prolonged period of low output, high unemployment, and widespread business failures. For purposes of this study, a depression is defined as a 25 percent or more loss of real Gross Domestic Product. During the Great Depression in the United States, real Gross Domestic Product declined 30 percent between 1929 and 1933.

¹⁰ The only comprehensive estimate of visitor industry employment comes from the 1995 input-output table. It showed that hotels and lodging accounted for 27.4 percent of the total jobs in the visitor industry. Using this percentage and reported hotel and lodging employment, it is possible to estimate visitor industry employment for other years.

In the 1980s, the fast pace of the CNMI economy gave a big boost to the building industry. At one point, the industry engaged approximately 5,000 workers, according to Census reports. They built houses, factories, hotels, stores, roads, and other infrastructure. Since then, as the economy has slowed and the demand for new capital has declined, employment in the construction industry has fallen. Between 1995 and 2000, the industry cut an estimated 2,080 jobs.

Table 6
CNMI EMPLOYMENT AND POPULATION

	1990	1995	2000	2005
Resources	500	560	560	600
Construction	4,310	3,800	1,720	1,280
Apparel	5,150	7,710	16,780	12,790
Other manufacturing	1,090	1,280	620	770
Transportation, communications, and utilities	1,200	1,540	1,500	1,510
Wholesale and retail trade	2,310	3,960	3,700	2,830
Finance, insurance, and real estate	520	820	880	980
Hotels and lodging	1,810	2,620	3,380	2,480
Eating and drinking places	1,060	1,800	1,550	1,300
Other services	2,250	3,650	4,100	5,710
Government	3,510	5,020	5,000	5,710
Total	23,710	32,760	39,790	35,960
Population	44,120	58,130	69,700	70,200

Led by a downturn in the apparel industry, the CNMI economy began to tip over in the early years of this decade. Between 2000 and 2005, the apparel industry eliminated 3,990 jobs. This time, however, there was no offsetting support from either the visitor industry or the construction industry. Due to a drop in Japanese tourism because of flight cancellations by JAL, the visitor industry lost 3,290 jobs. At the same time, builders continued to pare payrolls, slashing another 440 jobs. Overall, the economy shed 3,830 jobs or 9.6 percent of the total employment that it had in 2000. Were it not for the on-going momentum in the economy built up in the 1980s and 1990s, the damage would likely have been much greater.

As garment factory workers began to return home, population growth slowed to a crawl. After expanding at an average annual rate of 9.7 percent in the 1980s and 4.7 percent rate in the 1990s, population grew at a negligible 0.1 percent rate between 2000 and 2005. Given the high birth rate in the CNMI, this meant that hundreds of non-U.S. citizens left the islands during the five-year period.

Analysis of Employment Change

Table 7 presents an analysis of the source of employment change in the CNMI during the period of rapid expansion (1980-95) and the period of maturation (1995-05). Although other factors were also at work, three industries largely dictated the course of the economy over the two and one-half decades: the apparel industry, the visitor industry, and the construction industry.¹¹

Table 7
CNMI EMPLOYMENT CHANGE

	1980-95	Percent of Total Change	1995-05	Percent of Total Change
Attributable to apparel industry	11,560	42.3	7,620	238.1
Apparel industry	7,710	28.2	5,080	158.7
Supporting industries*	3,850	14.1	2,540	79.4
Attributable to visitor industry	15,340	56.1	-910	-28.4
Visitor industry	8,570	31.3	-510	-15.9
Supporting industries*	6,770	24.8	-400	-12.5
Attributable to construction industry	970	3.5	-4,760	-148.7
Construction industry	590	2.2	-2,900	-90.6
Supporting industries*	380	1.4	-1,860	-58.1
Attributable to other sectors	-530	-1.9	1,250	39.1
CNMI employment	27,340	100.0	3,200	100.0

*The analysis assumes constant employment multipliers over the two time periods: the apparel industry (1.50), the visitor industry (1.79), and the construction industry (1.64). These multipliers are derived from the 1995 input-output model.

The apparel and visitor industries were responsible for virtually all of the 27,340 new jobs created during the period of rapid expansion, according to the input-output analysis.

¹¹ In general, construction is not an independent factor in the CNMI economy. It is primarily determined by the growth of jobs, income, and population associated with the expansion and contraction of the apparel and visitor industries. However, due to the complexity of its behavior, construction is not adequately depicted by the input-output model. Unlike other economic variables, it depends not only on the level of economic activity but also the change in economic activity. Thus, in order to properly assess the role of the building industry in the economy, we have to treat any change in construction employment not predicted by the model (i.e., not related to activity in the apparel and visitor industries) as an independent factor.

Taking into account the multiplier effect, the apparel industry added an estimated 11,560 jobs to the economy, while the visitor industry generated 15,340. These jobs represented 42.3 percent and 56.1 percent, respectively, of the total employment change between 1980 and 1995. Together, the two industries accounted for 98.4 percent of the job growth. Indirectly, the apparel and visitor industries led to 1,900 new employment opportunities in the construction industry, which overall added 2,490 jobs. The 590 new construction jobs not supported by the apparel and visitor industries resulted in a contribution of 970 jobs (3.5 percent of total employment gain) to the economy after considering the indirect impact. A negligible loss of 530 jobs (-1.9 percent) was attributable to the remaining sectors of the economy.

The period of maturation, which resulted in only 3,200 new jobs, was a more complicated matter. Even though the apparel industry began to collapse at the end of the period, it still made a positive contribution to growth between 1995 and 2005, accounting for 7,620 new jobs. The visitor industry, on the other hand, was responsible for a loss of 910 jobs. But the biggest drag on the economy was the construction industry. After netting out the change in jobs attributable to the apparel and visitor industries, construction employment declined by 2,900. This in turn led to the loss 1,860 jobs in supporting industries and government. Other sectors of the economy contributed an estimated 1,250 new jobs to the economy.

Three conclusions can be drawn from this analysis. First, over the past twenty-five years, the CNMI economy has been largely driven by the apparel and visitor industries. Even the jobs in the construction industry, which in part had to be treated as an independent factor in the employment change analysis, are mostly tied in one way or the other to CNMI's two major exporting industries. Second, the structure of the CNMI economy has remained relatively simple and stable. Since 1980 the CNMI economy has had only two significant basic industries. Moreover, the input-output links of the apparel and visitor industries to the rest of the economy have remained relatively unchanged. This contention is evident in the fact that it only takes three employment multipliers (apparel, visitor, and construction) estimated in 1995 to effectively account for all of the CNMI employment change between 1980 and 2005. Third, the apparent stability of the multipliers over time implies that the 1995 input-output model continues to be a useful methodology for impact analysis and forecasting.

4. The 2004-2007 Contraction

The Turnaround

The CNMI economy peaked in 2004, although it showed signs of weakness much earlier (Table 8). The visitor industry wobbled but lost only a few hundred jobs between 2000 and 2004. At the same time, the apparel industry, which had finally surpassed the visitor industry as the biggest source of jobs in the economy, came to a lurching halt. After a twenty-year run, apparel employment reached 16,780 in 2000. It fell to 15,470 in 2003 and then bounced back to 16,820 in 2004, the all-time high.

Table 8
CNMI ECONOMY. 2000-2007

	2000	2001	2002	2003
Employment	39,790	39,440	38,610	38,550
Apparel	16,780	16,410	16,350	15,470
Hotels	3,380	3,000	2,790	2,870
Other industries	14,640	15,030	14,370	14,880
Government	5,000	5,000	5,100	5,330
Wages and salaries (mils. \$)	607.8	609.6	595.9	600.1
Apparel	190.4	186.3	185.6	175.6
Hotels	29.2	25.9	24.1	24.8
Other industries	244.2	253.4	239.3	246.2
Government	144.0	144.0	146.9	153.5
Personal income (mils. \$)	894.9	898.1	880.4	882.5
Wages and salaries	607.8	609.6	595.9	600.1
Other personal income	287.1	288.5	284.5	282.4
Per capita personal income (\$)	12,839	12,491	12,417	12,518
Personal income (mils. \$2000)*	894.9	905.3	900.2	898.7
Per capita personal income (\$2000)	12,839	12,592	12,697	12,747
Gross Domestic Product (mils. \$)	1,438.5	1,423.8	1,473.4	1,442.4
Per capita GDP (\$)	20,638	19,803	20,781	20,460
Gross Domestic Product (mils. \$2000)	1,438.5	1,413.9	1,515.7	1,519.4
Per capita GDP (mils. \$2000)	20,638	19,665	21,378	21,552
Consumer price index (2003.1=100)	101.4	100.6	100.8	99.8
GDP deflator (2000=1)	1.000	1.007	0.972	0.949
Personal consumption deflator (2000=1)	1.000	0.992	0.978	0.982
Population (mid-year)	69,700	71,900	70,900	70,500
U.S. citizens	30,300	30,900	31,000	31,000
Non-U.S. citizens	39,400	41,000	39,900	39,500

*\$2000 signifies that personal income and Gross Domestic Product are measured in constant 2000 dollars.

Table 8 (continued)
CNMI ECONOMY. 2000-2007

	2004	2005	2006	2007
Employment	40,420	35,960	30,460	26,010
Apparel	16,820	12,790	8,790	5,280
Hotels	3,110	2,480	3,200	3,090
Other industries	15,060	14,980	13,200	12,870
Government	5,430	5,710	5,280	4,780
Wages and salaries (mils. \$)	625.3	575.6	492.6	435.4
Apparel	190.9	145.2	99.8	59.9
Hotels	26.9	21.4	27.6	26.7
Other industries	251.1	244.6	213.1	211.1
Government	156.4	164.4	152.1	137.7
Personal income (mils. \$)	924.3	849.0	726.6	642.2
Wages and salaries	625.3	575.6	492.6	435.4
Other personal income	299.0	273.4	234.0	206.8
Per capita personal income (\$)	13,111	12,094	11,009	10,633
Personal income (mils. \$2000)	935.5	858.3	697.9	577.1
Per capita personal income (\$2000)	13,270	12,226	10,573	9,555
Gross Domestic Product (mils. \$)	1,519.4	1,413.9	1,305.6	1,123.9
Per capita GDP (\$)	21,552	20,141	19,782	18,608
Gross Domestic Product (mils. \$2000)	1,530.4	1,420.8	1,246.8	1,040.6
Per capita GDP (mils. \$2000)	21,708	20,239	18,891	17,229
Consumer price index (2003.1=100)	100.7	100.9	106.2	113.5
GDP deflator (2000=1)	0.993	0.995	1.047	1.080
Personal consumption deflator (2000=1)	0.988	0.989	1.041	1.113
Population (mid-year)	70,500	70,200	66,000	60,400
U.S. citizens	31,000	31,000	31,000	31,000
Non-U.S. citizens	39,500	39,200	35,000	29,400

In response to the generally sidewise movement of the apparel and visitor industries, the economy flattened out, creating just a handful of jobs. Total CNMI employment, rising at a sluggish 0.4 percent annual rate, increased from 39,790 in 2000 to 40,420 in 2004. Two-thirds of the 630 new jobs were in government. In response to the deteriorating economic climate, population growth abruptly decelerated. The population gain over the four years amounted to only 800 people.

Apart from the impending downturn, which by then was widely anticipated, the CNMI economy in 2004 was something worth celebrating. Indeed, 2004 could well turn out to be the best year ever for the economy. Gross Domestic Product amounted to \$1,519.4 million, according to the CNMI income and product accounts. With 40,420 jobs, CNMI workers earned \$625.3 million in wages and salaries. Annual pay averaged \$15,470. The exact figure is not known, but the average income of U.S. citizens was about \$30,000. On a per capita basis, personal income totaled \$13,111, the highest on record.

The seeds of the downturn were sown when China entered the World Trade Organization in 2001 and obtained access to American markets in 2005. Up to that time, CNMI garment factories competed successfully in the U.S. apparel market because of the Commonwealth's relatively low minimum wage and access to foreign labor. But in competition with China's extremely low wage rates and greatly underemployed population, there was no way that the CNMI could maintain its advantage. The first garment factory closed its doors in 2000. Of the thirty-four factories operating in 2000, only three remain today, according to a September 2008 count.

In 2007, apparel jobs dropped to 5,280, less than one-third the number at the industry's height in 2004. As a consequence, total CNMI employment plunged from 40,420 in 2004 to 26,010 in 2007, a 35.6 percent decline. Thus, in just three years the CNMI lost one-third of its economy, one that took more than twenty years to build.

Other statistics paint the same distressing picture. Adjusted for inflation, Gross Domestic Product (GDP) fell 32.0 percent and personal income declined 38.1 percent over the three-year period. Real per capita personal income decreased 28.0 percent. These deep slumps in real GDP and personal income are symptoms of an economy in depression.

There are no statistics on unemployment, but there is little doubt that the jobless rate soared. One indicator of conditions in the job market is the employment rate, which is defined as CNMI employment as a percent of population. It dropped precipitously from 57.1 percent in 2000 to 43.1 percent in 2007. In 2000, the Census Bureau estimated that the CNMI unemployment rate was a rock-bottom 3.9 percent. Back-of-the-envelope calculations based on the unemployment rate reported in 2000 and the change in the employment rate between 2000 and 2007 suggest that the unemployment rate approached 25 percent in 2007.

Illustrating the fact that the impact of the apparel downturn is not limited to foreign workers, the CNMI government had to eliminate more than 600 jobs in response to a shortfall in tax revenue.

Table 9
SELECTED CNMI ECONOMIC INDICATORS

	Business Gross Revenue (mils. \$)	Percent Change	General Fund Revenue (mils. \$)	Percent Change	Bank Loans (mils. \$)	Percent Change
2000	2,255	na	230.2	na	na	na
2001	2,117	-6.1	222.6	-3.3	na	na
2002	1,869	-11.7	187.9	-15.6	1,062.7	na
2003	1,914	2.4	209.8	11.6	919.0	-13.5
2004	2,034	6.3	217.9	3.9	818.4	-10.9
2005	2,020	-0.7	210.3	-3.5	798.9	-2.4
2006	1,829	-9.5	192.0	-8.7	734.8	-8.0
2007	1,672	-8.6	163.0	-15.1	674.3	-8.2
2008*	1,599	-4.4	155.4	-4.7	597.6	-11.4
2004-08	---	-21.4	---	-28.7	---	-27.0

*Estimates for 2008 are preliminary.

Table 9 (continued)
SELECTED CNMI ECONOMIC INDICATORS

	Residential Telephone Lines (number)	Percent Change	Auto Sales (number)	Percent Change	Residential Building Permits (number)	Percent Change
2000	11,113	na	1,581	na	186	na
2001	11,322	1.9	1,457	-7.8	124	-33.3
2002	11,525	1.8	1,298	-10.9	160	29.0
2003	11,645	1.0	1,692	30.4	160	0.0
2004	11,803	1.4	1,992	17.7	195	21.9
2005	11,201	-5.1	1,885	-5.4	186	-4.6
2006	10,092	-9.9	1,352	-28.3	167	-10.2
2007	9,381	-7.0	1,101	-18.6	120	-28.1
2008*	8,068	-14.0	1,080	-1.9	77	-35.8
2004-08	---	-31.6	---	-45.8	---	-60.5

*Estimates for 2008 are preliminary.

Other economic indicators reflect the widespread impact of the downturn (Table 9). Based on preliminary data, gross revenue of CNMI businesses fell 21.4 percent between 2004 and 2008 and 29.1 percent between 2000 and 2008. As tax collections dwindled over the last four years, general fund revenue for government operations declined 28.7 percent. The volume of bank loans decreased 27.0 percent in part because of a 45.8 percent drop in auto sales. Over the same period, the loss of 10,000 CNMI residents led to a 31.6 percent decline in the number of residential telephone lines and a 60.5 percent fall-off in the number of residential building permits.

Analysis of the Contraction

The downturn in the apparel industry is having a major impact on the CNMI economy. But is it what one would have predicted based on past behavior? More specifically, is there evidence that the apparel industry long-run employment multiplier continues to be about 1.5? This is an important question because of its implications for forecasting.

Between 2004 and 2007, the CNMI economy lost 14,400 jobs, including 11,540 in the apparel industry. Despite a decline in visitor arrivals, hotel and lodging employment remained relatively constant over this period, indicating that the visitor industry had little effect on job growth. Assuming that the apparel industry accounted for the entire job loss at the time, the implied employment multiplier is 1.25 ($=14,400/11,540$), which is smaller than the 1.50 estimate derived from the 1995 input-output model. Whereas the latter estimate is a long-run multiplier, the former estimate is a short-run multiplier. But is it still reasonable?

Simulations with complex models in Washington State indicate that, in response to a change in an industry's employment in a given year, about 30 percent of the indirect impact takes place in that same year, 40 percent in the next year, 20 percent in the third year, and 10 percent in the fourth year.

Assume that the apparel industry eliminates one job in 2005 and its long-run multiplier is 1.50. This means that the long-run indirect job loss in the CNMI economy is 0.50 jobs. But only 30 percent of the indirect job loss will take place in 2005. This amounts to 0.15 (30 percent of 0.50) jobs. The economy will lose another 0.20 (40 percent of 0.50) jobs in 2006 and another 0.10 (20 percent of 0.50) jobs in 2007 because of the loss of the apparel job in 2005. Thus, in 2007, the total indirect job loss is 0.45 ($=0.15+0.20+0.10$) jobs. Even after the third year, this is still less than the long-run indirect impact of 0.50 jobs.

To date, the apparel industry has eliminated 4,300 jobs in 2005, 4000 jobs in 2006, and 3,510 jobs in 2007 (Table 10). Applying the above calculations to these direct job losses yields an expected indirect impact of -3,740 jobs and a total impact of -15,280 ($=-11,540-3,740$) jobs. The implied multiplier is 1.32 ($=-15,280/-11,540$).

Table 10
EXPECTED APPAREL INDUSTRY
SHORT-RUN EMPLOYMENT IMPACT

	Apparel Employment Change	Indirect Employment Change			Total Employment Change
		2005	2006	2007	
2005	-4,030	-600	-810	-400	---
2006	-4,000	---	-600	-800	---
2007	-3,510	---	---	-530	---
Total	-11,540	-600	-1,410	-1,730	-15,280

The observed multiplier of 1.25 is still less than the expected multiplier of 1.32. But they are close enough to support the contention that the long-run multiplier is about 1.5. This implies that the eventual loss of 16,800 apparel jobs could ultimately cost the CNMI economy 25,200 jobs, approximately three-fifths of its peak employment in 2004.

5. CNMI Economic Projections

Federalization Scenario

One thing is certain: the CNMI economy will continue to head down.¹² The apparel industry, which has only a few factories still operating, will likely pull up stakes in 2009. All else being equal, the end of garment-making will cost the economy more than one-half of its jobs, taking into account the repercussions on other businesses and government.

Much less predictable is how the visitor industry will adjust to the policy of federalization, which has revoked the CNMI's authority over the minimum wage and immigration. Particularly onerous is the restriction on foreign workers, since they comprise about 70 percent of the visitor industry workforce. The central issue is the extent to U.S.-qualified residents of the CNMI will be willing to fill the visitor industry jobs vacated by deported aliens.

The "federalization" scenario shows how the CNMI economy would cope with a much reduced labor supply (Tables 11 and 13). Bear in mind that this is not the worst case scenario, as the next section on obstacles to growth argues. The federalization scenario, which might also be called the "make do" scenario, is based on three assumptions:

¹² These projections are intended to portray two distinct but plausible scenarios for the economy over the next seven years. The scenarios are based on a set of explicit assumptions, which are described in the following paragraphs. The projections are developed with the assistance of the CNMI input-output model and analyzed for reasonableness.

1. Apparel industry. The latest industry report showed that only three garment factories with 1,751 employees were still operating on July 1, 2008. These factories will close in 2009 and their so-called ripple effects on the rest of the economy will dissipate by 2012.
2. Federalization policy. The policy of federalization will be strictly enforced. This means that the federal government will have total control over the minimum wage and immigration in the CNMI. The minimum wage, which is now \$4.05 per hour, will increase in 50-cent increments each year until it reaches the federal minimum wage of \$7.25 per hour in 2015.

Applying federal immigration laws will result in the deportation of most of the foreign workers in the CNMI. This will affect not only the visitor industry but every business that employs aliens. At the peak of the economy in 2004, foreign workers accounted for about 70 percent of the CNMI workforce. Starting in 2009, deportation will proceed in steps until the process is completed in 2014.

3. Available labor force and outmigration. If the federal government deports three out of every four workers in the visitor industry, who will make the beds, serve food, and mow the lawns? Some of the labor shortage will be made up by U.S.-qualified residents. Higher pay by the visitor industry, boosted in part by a rising minimum wage, should help in this objective.

How many workers will be available to the economy? In 2005, U.S.-qualified residents held 12,600 jobs. In general, however, the U.S.-qualified resident population was underemployed, particularly among people born in the CNMI. Only 57 percent of the CNMI-born population 16 years of age and older participated in the labor force and 23 percent of them were unemployed, according to the 2005 survey of households. If one assumes that, in a labor-strapped economy, the CNMI-born labor force participation rate rises to 65 percent (still less than the 74 percent rate for other U.S.-qualified residents, as estimated by the 2005 survey of households) and the overall unemployment rate drops to 5 percent, the economy will have at its disposal an additional 3,000 workers. Add another 1,000 foreign workers who qualify for work visas and the potential employment in the CNMI approaches 17,000.

An implicit assumption in this scenario is that the U.S.-qualified resident population will remain relatively constant between 2005 and 2015. Thus, natural changes in the population (births less deaths) will be offset by changes due to migration. More specifically, this scenario does not assume a significant decline in population caused by an outmigration of people in response to deteriorating economic

conditions. This is an arguable assumption, as discussed in the next section on obstacles to growth. If U.S.-qualified residents instead choose to migrate to the states, it will only aggravate economic conditions in the CNMI. As noted previously, the federalization scenario is, in this sense, an optimistic prognosis.

After the economy peaks in 2004, it falls steeply into a depression, according to the federalization scenario. On top of the 4,460 jobs lost in 2005, the economy will shed another 16,730 jobs between 2005 and 2010. The total decline will amount to 52.4 percent of the employment in 2004. Between 2004 and 2010, real Gross Domestic Product (measured in constant 2000 dollars) will plunge 36.2 percent, while real personal income will plummet 35.0 percent.

The downturn in the economy during this period is solely attributable to the closure of the apparel industry. Still unaffected by foreign labor restrictions, the visitor industry will continue to expand, providing a small offset to the slump. Taking into account the multiplier effects, the arithmetic of the employment slide between 2004 and 2010 goes approximately like this: a loss of 23,000 apparel industry-related jobs, offset by a gain of 2,000 visitor industry jobs, yields a net loss of 21,000 jobs for the CNMI economy.

Table 11
CNMI ECONOMIC PROJECTIONS
Federalization Scenario

	2005	2010	2015
Gross Domestic Product (mils. \$2000)	1,420.8	976.2	852.1
Employment	35,960	19,590	16,270
U.S.-qualified residents	12,600	9,970	15,270
Foreign workers	23,360	9,620	1,000
Personal income (mils. \$2000)	858.3	608.5	515.7
Wages and salaries	581.9	395.5	324.9
U.S.-qualified residents	374.4	291.6	304.9
Foreign workers	207.5	103.9	20.0
Other income	276.4	213.0	190.8
Per capita personal income (\$2000)	12,226	11,666	12,740
Population	70,200	52,160	40,480
U.S.-qualified residents	39,400	39,400	39,360
Foreign workers	30,800	12,760	1,120
Apparel employment	12,790	0	0
Visitor industry employment	9,050	10,510	8,370

There are two noteworthy characteristics of the depression during the initial phase. First, the decrease in real GDP and personal income is much smaller than the decline in employment. This is due to the fact that a large number of the jobs lost during the downturn, especially in the apparel industry, are low-value added jobs that pay minimum wages. For example, as shown in the income and product accounts, the apparel industry, with 35.6 percent of CNMI employment, accounted for only 22.7 percent of GDP in 2005. Second, while the employment impact falls heavily on low-wage jobs held by aliens, it also leads to the loss of 2,630 high-wage jobs held by U.S.-qualified residents, roughly one-fifth of their total jobs in 2005. Published reports show that the CNMI government, which almost exclusively hires U.S.-qualified residents, eliminated 870 jobs between 2005 and 2007.

The story of the depression between 2010 and 2015 revolves around the visitor industry and its need for labor. In 2010, as the unemployment rate for U.S.-qualified residents soars above 30 percent, many of them will become desperate for jobs. Assuming no significant outmigration to mainland United States, they will have to turn to the visitor industry for work. At the same time, the visitor industry will begin to lose its foreign employees to federally-mandated deportation. In an effort to survive, establishments in the visitor industry will start offering significantly higher wages to attract the much needed workers. At the same time, these businesses will try to figure out ways of improving the efficiency of their operations. With a rising minimum wage, wages and salaries throughout the economy will increase, thereby enticing more people in the existing population to enter the labor force.

Not all efforts to stay in business will be successful. As a consequence, visitor industry employment will decline from 10,510 in 2010 to 8,370 in 2015. This will cause total employment in the CNMI to fall to 16,270, about the number of jobs that the economy supported in 1985. In 2015, one year after the last foreign worker is deported, CNMI population will total 40,480. This will include approximately 27,000 people born in the CNMI and 13,000 other U.S. citizens or U.S.-qualified residents, including 1,000 aliens with U.S. visas.

The losses during the 11-year depression will be staggering: a 59.7 percent decline in jobs, a 44.3 percent fall in real GDP, and 44.9 percent drop in real personal income. With no garment factories, a smaller visitor industry, a much reduced number of government workers, and a shortage of well-paying jobs, the CNMI economy will be hardly recognizable.

The economy, however, will finally level off and stabilize in 2015. At that time, the population will be fully employed and the last of the deported aliens will have left the islands. The visitor industry as well as the rest of the economy will then be constrained by a relatively fixed labor force. Thus, the economy will be neither falling nor rising at any appreciable rate.

How will the depression affect the economic welfare of the CNMI people, as measured by the unemployment rate and per capita income? With a fully employed population, the unemployment rate will fall to about 5 percent, significantly lower than the 16.6 percent

jobless rate estimated in 2005. Measured in 2000 dollars, per capita income peaked at \$13,270 in 2004. In 2015, it will decline to \$12,740, a 4.0 percent decrease. But this relatively small drop is deceiving, since the per capita income of U.S.-qualified residents in 2004 amounted to \$15,190. Thus, the 11-year decline in real per capita income for U.S.-qualified residents will be 16.1 percent. In short, U.S.-qualified residents of the CNMI will be working much harder to make less money than they did in 2004, according to the federalization scenario.

The projections of employment for U.S.-qualified residents in the federalization scenario may seem counter-intuitive and require further explanation. The full impact of the apparel industry shutdown is felt in 2010. This costs U.S.-qualified residents 2,630 jobs, not only in the apparel industry but also in trade, services, and government, as total U.S.-qualified resident employment falls from 12,600 to 9,970. Without new job openings in the visitor industry—its alien workforce is still largely in tack—the unemployment rate among U.S.-qualified residents soars.

But, as foreign workers are deported and the visitor industry fights for survival, thousands of jobs for U.S.-qualified residents become available by 2015. The rising minimum wage increases their attractiveness. Assuming that U.S.-qualified residents want to remain in the CNMI, the visitor industry and its multiplier effect on the rest of the economy create enough job opportunities to not only take care of the previously unemployed U.S.-qualified residents but also to draw many new people from the existing population into the labor force. Thus, the number of working U.S.-qualified residents rises to 15,270 in 2015, much higher than ever before.

Why would so many people want to work? It is an attempt to maintain their previous standard of living. Despite a higher minimum wage, most of the jobs offered in the transformed economy will pay lower wages than U.S.-qualified residents have come to expect. In cases like this, people tend to work more to make up the difference. This is why the scenario is also called the “make do” scenario.

Finally, it should be pointed out that if the period of deportation were extended another five years, it would not significantly affect the depth of the depression. Ultimately, the distance that the CNMI economy falls is determined by how many people are available for work after the aliens are deported. The only benefit to prolonging the deportation process is that it gives some people more time to adjust to the catastrophic changes in the economy.

Relief Scenario

The “relief” scenario assumes that the federal government gives back control of the minimum wage and immigration to the CNMI (Tables 12 and 13). With no restrictions on the use of foreign labor, the visitor industry will be able to expand as much as market conditions permit:

Table 12
CNMI ECONOMIC PROJECTIONS
Relief Scenario

	2005	2010	2015
Gross Domestic Product (mils. \$2000)	1,420.8	1,189.9	1,579.3
Employment	35,960	23,880	31,840
U.S.-qualified residents	12,600	11,800	13,100
Foreign workers	23,360	12,080	18,740
Personal income (mils. \$2000)	858.3	740.3	916.0
Wages and salaries	581.9	481.2	613.7
U.S.-qualified residents	374.4	368.5	429.9
Foreign workers	207.5	112.7	183.8
Other income	276.4	259.1	302.3
Per capita personal income (\$2000)	12,226	13,458	14,839
Population	70,200	55,010	61,730
U.S.-qualified residents	39,400	40,000	41,200
Foreign workers	30,800	15,010	20,530
Apparel employment	12,790	0	0
Visitor industry employment	9,050	13,060	16,670

1. Apparel industry. Even in this optimistic scenario, there is little hope of survival for the apparel industry.
2. Federalization policy. Recognizing the hardship that the policy of federalization would cause, Congress reverses its position and returns control of the minimum wage and immigration to the CNMI. The minimum wage remains at \$4.05 per hour, at least for two or three years.
3. Visitor industry. With no restrictions on foreign labor, the visitor industry will not be constrained by a shortage of labor. As a consequence, the industry, with the support of government, embarks on an aggressive program to double visitor arrivals by 2015. The chief aim is to try to fill the hole in the economy left by the apparel industry, thereby reducing the economic suffering.

Assuming a successful promotion effort, visitor industry employment will rise to 13,060 in 2010. The lift from the industry will be sufficient to bring a halt to the economic slide.

At the bottom of the depression, total employment will reach 23,880, down 40.9 percent from the peak in 2004. As a result of the lay-offs directly and indirectly tied to the apparel industry, the number of jobs held by U.S.-qualified residents will decline from 12,600 in 2005 to 11,800 in 2010. The outmigration of aliens who worked in the garment factories lowers CNMI population to 55,010 in 2010.

After hitting bottom in 2010, the economy will begin a period of recovery. As the visitor industry continues to expand at a 5 percent annual rate, it will add another 3,610 workers to its payrolls between 2010 and 2015. Total CNMI employment will climb to 31,840 in 2015, up 33.3 percent from the trough of the depression. This will still fall 21.2 percent short of peak employment in 2004.

Table 13
CNMI ECONOMIC PROJECTIONS
Average Annual Percent Change

	2005-10	2010-15
FEDERALIZATION SCENARIO		
Gross Domestic Product (\$2000)	-7.2	-2.7
Employment	-11.4	-3.6
Personal income (\$2000)	-6.6	-3.3
Population	-5.8	-4.9
RELIEF SCENARIO		
Gross Domestic Product (\$2000)	-3.5	5.8
Employment	-7.9	5.9
Personal income (\$2000)	-2.9	4.4
Population	-4.8	2.3

U.S.-qualified residents in the CNMI will fare reasonably well. New jobs in the tourist industry will more than make up for the losses in apparel industry and government. Employment among U.S.-qualified residents will rise to 13,100. In constant dollars, per capita personal income will amount to \$16,304, an increase of 7.3 percent since the prior peak in 2004. Reflecting the two-tiered economy, U.S.-qualified resident per capita income will exceed foreign worker per capita income by more than one-third, according to relief scenario.

It is possible to conceive of many scenarios for the CNMI economy. But the federalization scenario and the relief scenarios represent the two principal alternative futures for the economy. In other words, the most important economic issue facing the CNMI is the future stance of the U.S. Congress with regard to federalization. As these

two scenarios clearly show, life in the CNMI would be much better without federalization.

6. Obstacles to Growth

Federalization

The policy of federalization, which raises the minimum wage and restricts the use of foreign labor, will exacerbate the current economic problems in the CNMI, as shown by the above projections. By hindering the growth of the visitor industry, it will deepen and prolong the depression caused by the loss of the apparel industry.

Federalization will also preclude significant economic growth in the long run. The downfall of the apparel industry has already demonstrated the inability of the CNMI to compete with China in manufacturing, even when the minimum wage is \$3.05 per hour. Under current law, the minimum wage will jump to \$7.25 in 2015 (Table 14). Coupled with its small size and geographical isolation, the CNMI will have great difficulty producing exportable goods and services at competitive prices. The fact that the CNMI currently has no exporting industry of consequence, with the exception of the apparel and visitor industries, is evidence of the great challenge ahead.

Table 14
CNMI MINIMUM WAGE SCHEDULE
Dollars per Hour

	Minimum Wage
May 2006	3.05
May 2007	3.55
May 2008	4.05
May 2009	4.55
May 2010	5.05
May 2011	5.55
May 2012	6.05
May 2013	6.55
May 2014	7.05
May 2015	7.25

By raising the minimum wage, federalization is in effect placing the burden of economic growth on the shoulders of the visitor industry. As the same time, however, by deporting all but a few aliens by 2014, the policy is also putting a cap on the size of the industry's workforce. Thus, the policy is putting the CNMI economy in a box. As indicated by the

federalization scenario, once the visitor industry employs about 8,000 people, it will be unable to grow, which in turn will cause the CNMI economy to stagnate.

Government Services and Infrastructure

Government plays an important role in the CNMI economy. In FY 2007, the CNMI government spent nearly \$300 million and employed about 5,000 people (Table 15). More than one-half of the spending went for education, healthcare, and safety. Government wages and salaries were among the highest in the economy, averaging about \$29,000 per year.

In recent years, however, government revenues have been falling. Since 2004 general fund revenues have declined about 30 percent. Despite attempts to trim the budget, including eliminating the jobs of 1,000 workers, the CNMI government continues to run a deficit. In FY 2007, the deficiency amounted to \$55.5 million, more than one-fifth of total revenues.

Table 15
CNMI GOVERNMENT STATEMENT
OF ACTIVITIES, FY 2007

Millions of Dollars

	Activities	Percent of Total
REVENUES		
Program revenues	110.7	45.3
Taxes and other general revenues	133.6	54.7
Total revenues	244.3	100.0
EXPENSES		
Education	54.1	18.0
Health	64.9	21.6
Public safety and law enforcement	41.8	13.9
Community and social services	22.2	7.4
General government	21.6	7.2
Capital projects and public works	23.2	7.7
Other expenses	72.0	24.0
Total expenses	299.8	100.0
NET DEFICIENCY		
Net deficiency (percent of revenues)	-55.5	-22.7

Clearly, government revenues are following the downward path of the economy. According to the above projections, both of which depict deep depressions, the CNMI government could eventually be faced with the task of cutting its budget by one-half.

What happens then to education, healthcare, and safety? How will the government maintain roads and other infrastructure? Of particular concern is the impact of falling revenues on schools, since the school-age population, consisting mostly of U.S.-qualified residents, is unlikely to decline sufficiently to offset the drop in government revenue during the depression. The federal government, which has expressed a willingness to provide assistance during this period of transition, could make up the difference, but the bill would amount to \$100 million or more. If economic conditions force the CNMI government to make significant cuts in spending, it will lower the quality of education, impair the health and safety of the population, and jeopardize the islands' infrastructure. This in turn will further damage the economy.

Outmigration

Despite the unpleasant portrayal of the economy, the federalization scenario is predicated on one hopeful assumption: the U.S.-qualified resident population will remain relatively constant. If there is no significant outmigration, the economy will eventually settle down to a workable size, supporting about 16,000 jobs. However, with no ability to expand its workforce beyond that number, it will ultimately stagnate. The only growth will come from increased labor productivity. Considering the industrial make-up of the economy, economic growth will probably amount to less than one percent per year, according to the scenario.

But is the assumption of no significant outmigration a good one? In light of the lack of jobs, a decline in the standard of living, a deteriorating public sector, and the right to move freely to the states, which offer much higher paying jobs, it would be surprising if a substantial number of U.S.-qualified residents did not leave the CNMI (Table 16).

Because of distance and cultural differences, CNMI residents may be less inclined to move away from home than people in the rest of the United States. But it should be pointed that for years there has been a steady stream of American Samoans migrating to the states in search of better jobs and schools. Moreover, as Samoans have built communities in the states, it appears that the process of leaving home has become easier.

Indeed, there is preliminary evidence that perhaps as many as 4,000 U.S.-qualified residents have already moved to the states in response to the economic downturn in the CNMI. Like the American Samoans, people originally from the CNMI have established substantial communities on the mainland, particularly in the western states.

The loss of local residents would further damage the economy in two ways. First, it would reduce the number of people available for the labor force. With no ability to replace those workers, the economy would slump even more. Second, since people who migrate tend to be young and educated, the CNMI would lose its "best and brightest," thereby further reducing its chances for economic advancement in the future.

Table 16
CNMI AND U.S. AVERAGE PAYROLL, 2002
Dollars per Year

<u>Industry</u>	<u>CNMI Average Payroll</u>	<u>U.S. Average Payroll</u>
Construction	11,155	35,352
Apparel	10,874	21,700
Other manufacturing	11,864	39,615
Wholesale and retail trade	10,120	27,368
Transportation and warehousing	15,016	31,770
Information	21,895	52,105
Financial activities	14,819	51,365
Accommodations	12,585	19,277
Food services and drinking places	8,053	11,146
Other services	12,873	35,425
Government	28,804	36,319

Foreign Business Ownership and Investment

Like labor, capital is mobile and tends to go where the best economic opportunities are found. During the period of rapid expansion in the CNMI, millions of dollars were invested in the economy to build factories, hotels, retail stores, and housing. Given the relatively poor state of the economy at the time of the Covenant, it is not surprising that most of the financial capital came from external sources.

One manifestation of the degree to which the CNMI depends upon outside financing is the number of business establishments operated by non-CNMI born owners (Table 17). In 2002, about 80 percent of CNMI businesses were under foreign or non-CNMI born U.S. ownership, according to the economic census. It also appears that these businesses employed about 80 percent of the workers in the private sector. Due to non-reporting establishments, it is impossible to get more exact counts.

When an economy falls into recession or depression, investment often dries up due to shrinking prospects. It typically returns when business conditions improve or new economic opportunities present themselves. Given the constraints put on the CNMI economy, it may never develop a good investment climate again, certainly nothing like the period of rapid growth. Consider what the CNMI now has to offer potential investors: small size, geographic isolation, a plummeting economy, potential long-term stagnation, high and rising wages, a limited supply of labor, degenerating public services, and, down the road, a crumbling infrastructure.

Table 17
CNMI BUSINESSES BY OWNERSHIP STATUS, 2002

	Establishments	Employment	Percent of Total
United States, CNMI born	220	5,939	18.0
United States, other	226	5,168	15.7
Japan	138	3,601	10.9
Philippines	38	250-499	0.8-1.5
Korea	122	4,972	15.1
Multiple citizenship	105	1,567	4.8
Other	129	5,000-9,999	15.2-30.3
Not reported	298	na	na
All establishments	1,276	32,989	100.0

7. Conclusion

For nearly a quarter of a century, the Commonwealth of the Northern Mariana Islands sustained one of the fastest growing economies in the world. Advancing at an 8.7 percent annual rate, employment soared from 5,420 in 1980 to 40,420 in 2004. In response to the booming economy, population quadrupled, rising from 17,400 to 70,500. The expansion clearly benefited the U.S.-qualified residents of the CNMI. Adjusted for inflation, the income of Chamorro households increased more than two-thirds over the period.

This achievement was all the more remarkable because of the CNMI's small size and geographical isolation. Many island states languish in similar circumstances, seemingly powerless to improve their economic lot in life.

The CNMI built a prosperous economy based on the apparel and visitor industries, taking advantage of its trading relationship with the United States, its appeal as a tourist destination, its proximity to inexpensive labor in Asia, and its expanding infrastructure funded in large part by the federal government. Critical to the CNMI's economic success were duty-free access to U.S. markets and local authority over immigration and the minimum wage, which were granted by Congress when the Commonwealth was established in 1978.

Despite a robust economy, the CNMI has remained vulnerable to forces beyond its control. The turning point for the economy took place when China became a member of the World Trade Organization in December 2001 and obtained the right to enter U.S. markets in 2005. Unable to compete with China's cheap labor, CNMI garment factories began to shut down in 2000. By 2007, the apparel industry had lost more than 11,000 jobs. Total employment in the economy fell to 26,010, a 35.6 percent drop from its peak in 2004. Thus, in the short span of three years, the CNMI lost one-third of its economy, one that took more than twenty years to build.

A second threat to the economy is the policy of “federalization,” which has taken away CNMI control over the minimum wage and immigration, giving it back to the federal government. Under current law, most foreign workers in the CNMI will be deported by 2014. In the meantime, the minimum wage will double, rising in 50-cent increments until it reaches the federal rate of \$7.25 per hour in 2015. The immigration measure could prove troublesome for the visitor industry, now the CNMI’s only driving force in the economy, since about 70 percent of its workers are non-U.S. citizens.

The outlook for the CNMI economy is bleak. The last garment factory is expected to close its doors in 2009. After one or two good years, the visitor industry will have to begin grappling with a declining workforce, as foreign workers are forced to leave the islands. Even if local residents are willing to take the low-wage jobs in hotels, restaurants, and retail stores—a strong assumption—the visitor industry will face a labor shortage. Under the best of circumstances, business revenue and employment in the visitor industry will likely decline about 20 percent between 2010 and 2015.

As a result of the demise of the apparel industry and the expected decline of the visitor industry, the CNMI economy stands to lose approximately 44 percent of its real Gross Domestic Product, 60 percent of its jobs, and 45 percent of its real personal income by 2015, according to the “federalization” scenario. Unequivocally, this is a depression of great magnitude. It is equivalent to turning back the clock for the CNMI economy to 1985.

It is comparatively simple to estimate what happens to jobs and income when an economy falls apart. Much more challenging is predicting the social consequences of the resulting recession or depression. Will there be a significant increase in crime, divorce, domestic abuse, alcoholism, and mental illness? Undoubtedly, the slumping economy will aggravate social problems. At the same time, local government will lose much of its ability to provide assistance to people in distress. In the federalization scenario, CNMI government revenue in constant dollars will decline about 45 percent, following the drop in real personal income. The financial shortfall will make it extremely difficult to run schools, operate medical facilities, keep law and order, and maintain roads.

The federalization scenario is predicated on the assumption that U.S.-qualified residents will not only remain on the islands but also participate in the labor force in much greater numbers than they have in the past. However, in reaction to the collapsing economy and deteriorating public services, especially education, healthcare, and safety, some local residents will decide to pack up and leave the CNMI. If the stream of outmigration is significant enough, it will cause the economy to spiral down even more.

Is there anything that can be done to reverse the disastrous slide? In the legislation restricting foreign immigrants in the CNMI, Congress promised to provide aid and assistance during the period of transition. Short of spending tens of millions of dollars to shore up education, healthcare, and other government functions, there is little that can be done to improve the economy. Indeed, the policy of federalization, which is driving up production costs and capping the supply of labor in the CNMI economy, would appear to preclude any meaningful economic development in the future.

On the other hand, if the policy of federalization were reversed, it could have a substantial impact on the CNMI economy, as illustrated by the “relief” scenario. The return to local control over the minimum wage and immigration would allow the visitor industry to expand, making up for some of the jobs lost during the downturn of the apparel industry. If the visitor industry grew at a 5 percent annual rate between now and 2015, the economy would have close to 32,000 jobs, about twice the number of jobs in the federalization scenario. The economy would still be about one-fifth smaller than it was at its peak in 2004. But compared to the federalization scenario, the economic and social suffering would be much more manageable.

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