An Economic Analysis of Guest Workers in Maryland's Blue Crab Industry

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The University of Maryland's Sea Grant Extension program has been monitoring the health and status of the Maryland blue crab processing industry since 1999. An annual industry survey is mailed to processing plants licensed by the Maryland Department of Health in January in order to collect data for the previous year's production. This survey has enabled us to estimate the economic impact that regulations such as size limits and the possession restriction on sponge crabs has on the health of the industry (http://www.mdsg.umd.edu/crabs/).

The annual survey of crabmeat plants collects data on total employment as well as a breakdown of employment by Maryland non-resident employees. By looking at the production of these H2-B workers over the past five years, we can estimate what the likely impact of the unavailability of these workers will have on the industry.

The average production of crabmeat in Maryland during the 2003-2007 period was 2.2 million pounds with a first wholesale value of over $17 million. The production of crabmeat is very labor intensive. If we assume that H2-B visa workers cannot be replaced by domestic workers, the industry will lose the total production that H2-B laborers provide. We estimate the total revenue loss in sales by multiplying the average number of H2-B workers (376) times the average production per worker (3,167 pounds) times the average value of that production ($8.00). The resulting loss in revenues is $9.5 million, about 46% of the industry's average revenues over the 2003-2007 period. The actual industry losses may be significantly higher as the firms that rely on H2-B visa workers that are already stressed by increased competition from imports and low crab harvests might become unprofitable and cease operations altogether, creating job losses for domestic workers. Most of these firms are the larger producers in Maryland. From our survey, we estimate that in 2007, 56% of Maryland firms relied on H2-B visa workers. However, these firms that hire H2-B visa workers produce 82% of Maryland's crabmeat production.

Tom Rippen

What impact will the loss of H2-B visa workers in Maryland's seafood processing industry have on other employment in the region? There are three ways that domestic workers can be impacted by this loss: (1) Industries that supply seafood processors will experience a drop in demand for their output, resulting in less employment within those supporting industries (Indirect Effects) ; (2) The resulting direct reduction in employee income as well as the indirect loss of jobs reduces spending in the local economy (Induced Effects); and (3) Businesses heavily reliant on H2-B visa workers may cease to operate, creating a loss of jobs for domestic workers. Based on Maryland state data for the Canned and Cured Seafood Industry, every direct job in the industry is linked to 0.41 indirect jobs and the direct and indirect jobs together induce an additional 0.36 jobs. Thus every lost job in the crabmeat processing sector will lead to 0.77 lost jobs elsewhere in the state economy.

Table 1. Effect on domestic employment of lost guest worker jobs.

For each H2-B visa job lost	Domestic indirect and induced jobs lost related to H2-B output	Domestic crabmeat jobs lost	Domestic indirect and induced jobs lost related to domestic crabmeat job output	Total domestic jobs lost in Maryland economy
	0.77	1	0.77	2.54

If we assume that the firms that used H2-B workers for almost all their employment would cease to operate, a reasonable estimate is that about 50% of the domestic workers in the industry would lose their jobs due to plant closings. The result is approximately a 1:1 ratio, for every H2-B visa job lost, a domestic crabmeat industry worker will lose their job. When the domestic workers lose their jobs, they have the same ratio of lost indirect and induced jobs of 0.77. The total impact is the sum of the jobs lost from the three effects as shown above in Table 1.

Every H2-B visa job lost is estimated to lead to a loss of 2.54 domestic jobs due to business failures and the indirect and induced impact related to those jobs. Thus, it is estimated that the loss of approximately 376 H2-B visa workers in Maryland's crabmeat processing industry would lead to the loss of 955 domestic jobs throughout the Maryland economy.

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