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## Understanding Occupational Accounting's Role in Economic Development

Economic Accounting Note

September 8, 2020

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### Issue

In the U.S., we live and work in an economy motivated by self-interest and competition. One result of this economic system is the division of work into occupations. In theory, both businesses and workers benefit from this ordering of production into occupational-based processes. From the perspective of business owners, occupations are carefully-formulated slices of a production process that, when combined, maximize productivity and profits. From a worker's perspective, occupations allow them to spend most of their time performing work that takes advantage of their talents and interests.

But occupational design that results from a self-interested system can end up harming some workers. Businesses often find that it is in their self-interest to define occupations based on increasingly small slices of repetitive work. These small slices may increase overall productivity, but decrease the amount of value added by any single occupation. After this restructuring of responsibilities, some occupations may only add value of \$10 per hour, performing unskilled functions over and over again, day after day. The competitive pressure that drives productivity and splitting work into more narrowly-defined occupations results in unrewarding work at a wage less than is required to pay for the necessities of life.

As a society we are beginning to recognize that these increasingly narrow occupational slices are harmful to both individuals and communities. In this note, we discuss occupational accounting and its role in supporting regional economic development.

### Discussion

The work of regional economic development is to provide the capacity and opportunity for everyone to fully contribute to the economy. Different people have natural affinities



and talents for different types of work. Some enjoy building and creating with their hands, some enjoy working with people, while others enjoy working with ideas. Since we need all of these interests and talents to provide for our daily needs, everyone can find meaningful work assuming that jobs are designed to match these different interests and talents.

Occupational design is not at the top of people's minds when discussing economic development and performance. Occupations are usually thought of as a given in the economy, and the real work in economic development is to train people for these occupations. Businesses define occupations, and educational institutions design curriculum and degree or certification programs in response. Economic development serves as an arbitrator within this workforce development system, working to balance supply of occupational workers with job demand in the local economy.

A generally-accepted system of occupational accounting has been developed to assist in managing workforce development. Each occupation has workforce requirements for education and experience, and a wage range that corresponds to the value that a worker adds to the economy when performing work in this occupation. In a local area, we can count up the number of jobs in each occupation using an industry-occupation matrix that indicates for each industry the share of total employment in an occupation. With occupational accounting, we can project shortages of occupational workers in a local area based on projected industry growth, and develop incentives for people to train to fill these jobs to alleviate shortages.

As an example, the table in Figure 1 shows projected occupational requirements for a business expanding in a local area. The accounting summarizes the number of local jobs by level of education and experience generated by the new facility and its local suppliers. Economic development professionals use this information to manage the workforce development system. Management actions may include implementing programs to avoid labor shortages and deciding whether to incentivize firms to locate to the area to provide job opportunities for under-employed members of the workforce.



Table 1: Example of Accounting for Occupational Requirements of Industry Expansion

| Industry Life Cycle Workforce Employment  | Current Local Employment | Expanded Local Employment |
|---|--------------------------|---------------------------|
| <b>Occupation Requirements (Education - Experience - OTJ Training)</b>                    |                          |                           |
| Associate's degree - Less than 5 years - None   | 55                       | 0                         |
| Associate's degree - None - Long-term on-the-job training                                 | 45                       | 0                         |
| Associate's degree - None - Moderate-term on-the-job training                             | 195                      | 4                         |
| Associate's degree - None - None  | 6,293                    | 6                         |
| Associate's degree - None - Short-term on-the-job training                                | 31                       | 0                         |
| <b>Associate's degree -- Total</b>  | <b>6,619</b>             | <b>10</b>                 |
| Bachelor's degree - 5 years or more - None  | 2,257                    | 6                         |
| Bachelor's degree - Less than 5 years - Internship/residency                              | 9                        | 0                         |
| Bachelor's degree - Less than 5 years - Moderate-term on-the-job training                 | 9                        | 0                         |
| Bachelor's degree - Less than 5 years - None  | 3,867                    | 13                        |
| Bachelor's degree - Less than 5 years - Short-term on-the-job training                    | 24                       | 0                         |
| Bachelor's degree - None - Internship/residency   | 676                      | 0                         |
| Bachelor's degree - None - Long-term on-the-job training                                  | 54                       | 0                         |
| Bachelor's degree - None - Moderate-term on-the-job training                              | 1,918                    | 5                         |
| Bachelor's degree - None - None   | 8,499                    | 28                        |
| Bachelor's degree - None - Short-term on-the-job training                                 | 84                       | 1                         |
| <b>Bachelor's degree -- Total</b>   | <b>17,397</b>            | <b>55</b>                 |
| <b>Doctoral or professional degree -- Total</b>   | <b>3,591</b>             | <b>1</b>                  |
| High school diploma or equivalent - 5 years or more - Long-term on-the-job training       | 4                        | 0                         |
| High school diploma or equivalent - 5 years or more - Moderate-term on-the-job training   | 32                       | 1                         |
| High school diploma or equivalent - 5 years or more - None                                | 1,035                    | 15                        |
| High school diploma or equivalent - Less than 5 years - Long-term on-the-job training     | 2                        | 1                         |
| High school diploma or equivalent - Less than 5 years - Moderate-term on-the-job training | 275                      | 5                         |
| High school diploma or equivalent - Less than 5 years - None                              | 7,199                    | 13                        |
| High school diploma or equivalent - Less than 5 years - Short-term on-the-job training    | 0                        | 0                         |
| High school diploma or equivalent - None - Apprenticeship                                 | 2,009                    | 6                         |
| High school diploma or equivalent - None - Long-term on-the-job training                  | 6,434                    | 23                        |
| High school diploma or equivalent - None - Moderate-term on-the-job training              | 19,067                   | 66                        |
| High school diploma or equivalent - None - None   | 1,108                    | 2                         |
| High school diploma or equivalent - None - Short-term on-the-job training                 | 19,991                   | 36                        |
| <b>High school diploma or equivalent -- Total</b>   | <b>57,156</b>            | <b>168</b>                |
| Less than high school - Less than 5 years - Moderate-term on-the-job training             | 2,137                    | 7                         |
| Less than high school - Less than 5 years - Short-term on-the-job training                | 0                        | 0                         |
| Less than high school - None - Long-term on-the-job training                              | 386                      | 0                         |
| Less than high school - None - Moderate-term on-the-job training                          | 1,094                    | 88                        |
| Less than high school - None - None   | 771                      | 1                         |
| Less than high school - None - Short-term on-the-job training                             | 40,284                   | 54                        |
| <b>Less than high school -- Total</b>   | <b>44,672</b>            | <b>150</b>                |
| <b>Master's degree -- Total</b>   | <b>2,078</b>             | <b>0</b>                  |
| Postsecondary non-degree award - Less than 5 years - Moderate-term on-the-job training    | 1                        | 0                         |
| Postsecondary non-degree award - Less than 5 years - None                                 | 1,088                    | 2                         |
| Postsecondary non-degree award - None - Long-term on-the-job training                     | 280                      | 1                         |
| Postsecondary non-degree award - None - Moderate-term on-the-job training                 | 208                      | 0                         |
| Postsecondary non-degree award - None - None  | 6,734                    | 1                         |
| Postsecondary non-degree award - None - Short-term on-the-job training                    | 1,625                    | 18                        |
| <b>Postsecondary non-degree award -- Total</b>  | <b>9,936</b>             | <b>23</b>                 |
| <b>Some college, no degree -- Total</b>   | <b>884</b>               | <b>1</b>                  |
| <b>Grand Total</b>  | <b>142,333</b>           | <b>408</b>                |

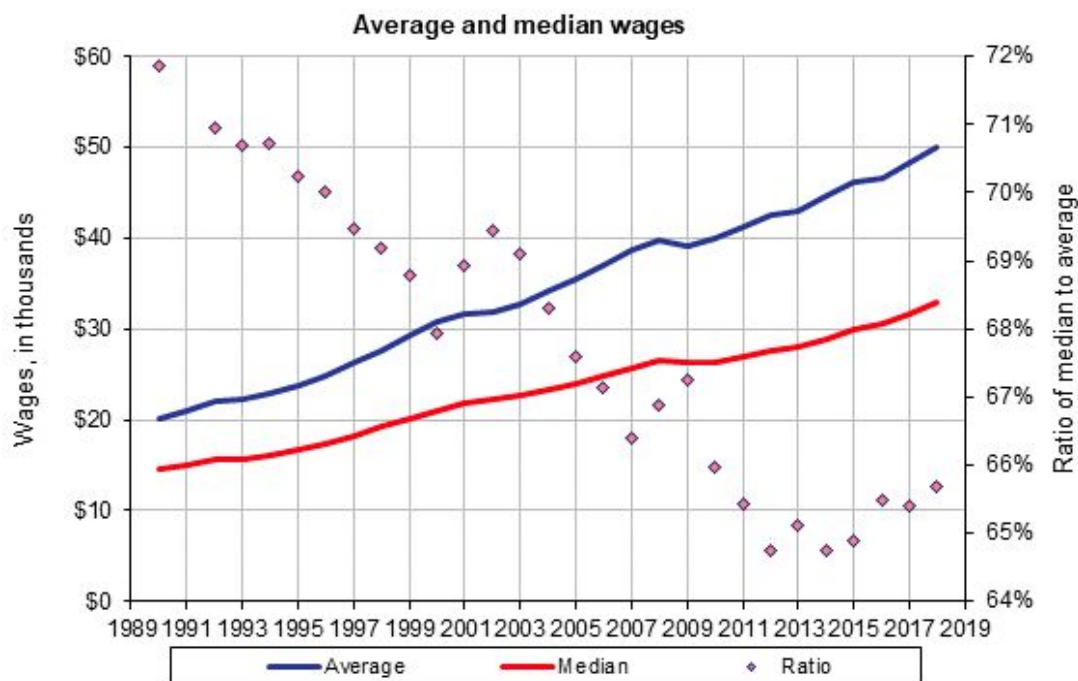
“Under-employed” is a term used within the field of economic development to define a cohort of the employed workforce that is less than fully contributing their value based on their training and experience. From an economic development perspective, under-employment is an occupational demand problem, not a case of over-supply. The situation of under-employment is often attributed to too large a share of local

employment in low skill, low wage industries. In response, the economic development community seeks out industries that pay higher average wages.

Turning now to the business perspective, occupational definitions are not a given, but a variable to be managed to compete in the marketplace. Competition applies an ever constant pressure to increase productivity, quality, and performance. Businesses respond by reorganizing their processes and improving their tools. This competitive pressure has resulted in assembly lines for everything from cars to hamburgers, just-in-time inventory production schedules, enterprise resource planning systems, and the more recent push towards marrying mechanization with computerization to automate processes. But this ever-present force has also resulted in businesses defining many occupations that require little education and training, as illustrated above in Table 1.

While businesses are doing what they need to do to compete, from a societal standpoint this competitive pressure has resulted in greater inequality in wages and dignity of work between occupations. According to the U.S. Social Security Administration, the median wage as a percentage of the average wage has been falling over the past thirty years as shown in Figure 2.

Figure 2: Trends for Median and Average Wages





Source: <https://www.ssa.gov/oact/cola/central.html>

This indicator of inequality is now to the point where one-half of workers make only 66% of the average wage rate of \$50,000. Occupational accounting is revealing that low-wage occupations, which once were considered entry-level positions, are now career jobs for more and more Americans.

Society's response through the political process has been to set minimum wage rates in an effort to limit the harm to workers. Given that these rates are not tied to cost-of-living and poverty income levels, some local areas have set living wage rates above that of state and national minimum wages. Socially-responsible businesses are also recognizing a living wage as a minimum acceptable standard, taking into account not only their own but the public interest as well when setting wages for occupations.

As part of society's response, what role does the economic development community play in regard to occupational accounting, jobs, and wages? Industry is focused on defining occupations and associated wages to maintain competitiveness, while politics is focused on balancing this competitiveness against harm to workers through the setting of minimum-acceptable wage rates. Neither industry nor the political system has the perspective of developing an economy in which everyone can fully participate. In our society, especially with the diminishing role that labor unions play in the economy, that role is specific to the economic development community through its work in industry and workforce development.

## Guidance

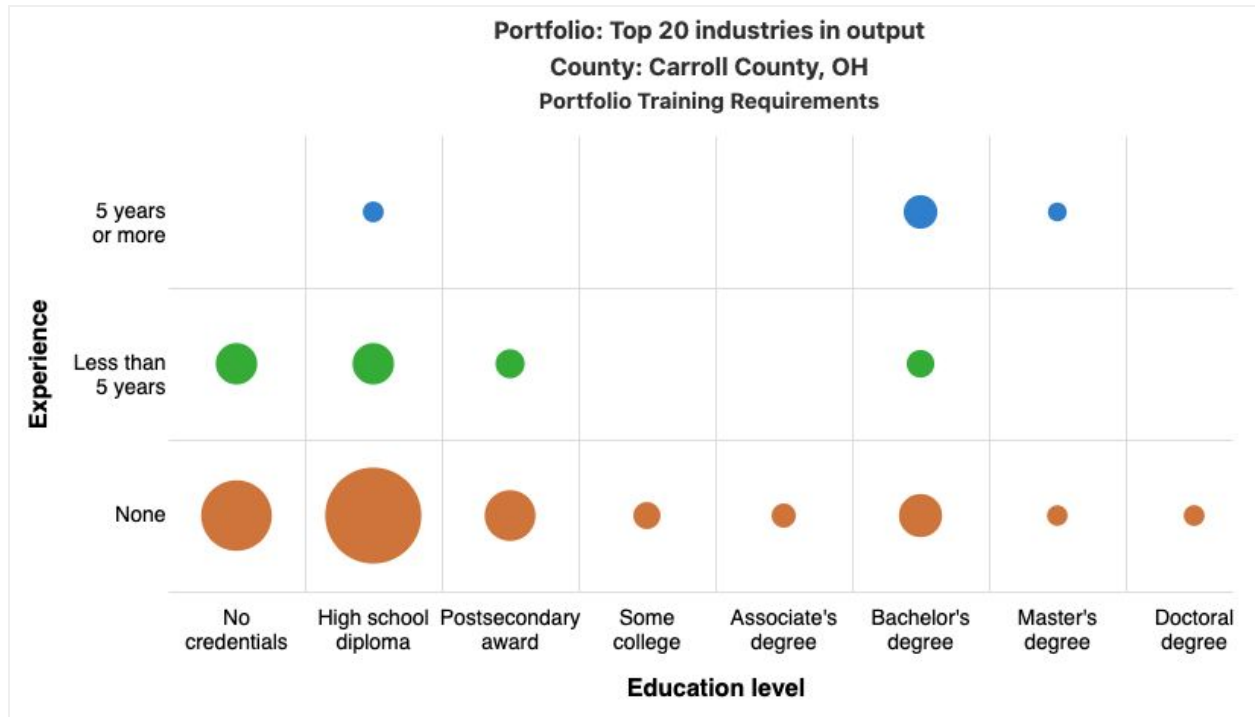
In the economic development community, it is our responsibility to account for and react to trends that are moving in the opposite direction of developing an economy in which everyone can fully participate. We see this negative trend happening now in our occupational chart of accounts. Career jobs that offer less than a living wage and repetitive, unskilled work are signs of an undeveloped economy, not economic development.

We recommend that economic development agencies implement occupational accounting practices to support the goal of providing everyone with the capability and opportunity to fully contribute to the economy. Knowing the current workforce situation is the first step towards developing an economy in which everyone can fully contribute. Start with accounting and reporting on the labor training requirements for industries operating in your local area. For example, Figure 3 shows the requirements for a



county's portfolio of 20 largest industries in output. In this county, the largest industries provide for lots of entry-level, basic training job opportunities, but relatively few opportunities for career growth through additional educational training or job experience.

Figure 3: Accounting for and reporting on your area's training requirements



Our occupational accounting guidance includes taking the following actions:

- Set occupational goals for infrastructure and industry development programs. Tie these goals directly to the objective of developing capabilities and opportunities for everyone to fully contribute to the economy. In doing so, your daily work will be guided by this strategic objective.
- Require occupational accounting when preparing economic accounting statements for each project. Use Benefit-Cost Analysis and Economic Impact Analysis to measure return on investment and to project the impact a project will have on achieving occupational goals.
- Move away from using average wages and towards defining and tracking metrics tied directly to the goal of full participation. One example of this type of occupational accounting is given in the chart in Figure 2, that of tracking the



median-to-mean wage ratio. Another example is tracking occupational variety and training requirements that offer career advancement. An economy that has a variety of occupational opportunities is better able to match job opportunities with talents and interests, increasing the likelihood that everyone can contribute fully to the economy.

- When offering financial incentives to businesses for industry expansion and retention, define covenants tied to socially-responsible business practices that take into account both public and private benefits, including designing occupations to provide workers with dignity, a living wage, and a career path.