Can Creative Industries and Occupations Drive Regional Growth? Evidence from Local Employment Spillovers in Japan

Topic: Input-Output and Orange Economics
Author: Takeshi Nagamune

This study examines whether creative activities can generate local employment spillovers comparable to or complementary with those of traditional manufacturing in Japan's post-2010 regional revitalization context. We focus on creative (orange economy and related) activities alongside creative/knowledge-intensive occupations and ask whether they operate as growth drivers by inducing indirect employment responses in surrounding local activities. Conceptually, the inquiry is anchored in the local-multiplier tradition, interpreting spillovers as the employment responses of non-basic local activities to changes in basic sector employment.

We construct a workplace-based panel from the 2010 and 2015 Population Census of Japan that contains industry codes and fine occupational sub-classifications at two spatial scales - municipalities and Urban Employment Areas (UEAs). Using these tabulations, we identify creative/knowledge-intensive occupations at a granular level and build two comparison lenses. First, we test whether growth in creative/knowledge-intensive occupations is associated with growth in total local employment. Second, in explicit parallel to Moretti's (2010) manufacturing-based test that splits workers by education to capture "innovative/skilled" labor, we cross-classify industries and occupations inside manufacturing to isolate knowledge-intensive workers within manufacturing and examine whether their local spillovers exceed those of manufacturing employment as a whole.

Empirically, we operationalize local employment spillovers as multipliers in two complementary forms. We estimate (i) level-change multipliers - the change in total local employment associated with a one-worker increase in a putative basic category (creative/knowledge-intensive occupations or manufacturing) - and (ii) elasticities - the percentage response of total employment to percentage changes in the basic category. Regressions relate 2010-2015 changes in total employment to corresponding changes in basic-category employment while controlling for standard regional attributes (demographic structure, population growth, labor-market conditions, educational attainment). The full set of estimates is implemented at both municipalities and UEAs to assess how spatial aggregation shapes measured spillovers. Robustness checks - varying control sets and using narrower definitions of the creative set - confirm the stability of the main relationships.

Three principal findings emerge. First, in both municipalities and UEAs, growth in creative/knowledge-intensive occupations is positively and statistically associated with growth in total local employment, indicating economically meaningful indirect employment responses. These effects are stronger and more stable at the municipality scale, which is consistent with spillovers materializing where commuting and local consumption linkages are dense. Second, manufacturing as a whole continues to display positive and significant local multipliers, reaffirming its role as a basic sector in Japan. Third, within manufacturing, the knowledge-intensive subset does not consistently yield larger spillovers than manufacturing workers overall - significance appears primarily at the municipality level. This pattern is consistent with an intra-industry transmission mechanism in which upstream R&D/engineering tasks mainly stimulate other tasks inside manufacturing rather than widely across local non-basic activities.

The study makes four contributions. (1) By adopting an occupation-based definition supported by fine sub-classes, we capture creative functions at the worker level, mitigating misclassification due to within-industry heterogeneity. (2) A two-scale design (municipalities vs UEAs) clarifies how aggregation affects estimated multipliers and helps explain cross-study variation in local-multiplier

results. (3) The manufacturing-internal test provides an occupation-based counterpart to the Moretti-style skilled-labor test, allowing a direct comparison between manufacturing-wide spillovers and any additional effects of knowledge-intensive functions inside manufacturing. (4) Using official census tabulations for Japan adds non-Anglophone evidence to a literature still dominated by U.S./European cases. Within the local-multipliers tradition, to our knowledge this is the first Japan-based empirical analysis that explicitly defines creative activity and identifies the associated employment spillovers, which is valuable for national policy and academic debate.

Future work will further refine the empirical analysis of the employment spillover pathways of creative industries and occupations within an input-output-oriented perspective.