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Creative Industries and Regional Productivity Growth in the Developing Economy: Evidence from Indonesia

FIKRI ZUL FAHMI AND SIERDJAN KOSTER

ABSTRACT This paper examines the degree to which creative industries stimulate regional productivity growth in a developing country, Indonesia. The Indonesian government promotes long-established “traditional” craft businesses as creative industries, but they pay less attention to new knowledge creation and focus on highlighting heritage values as selling points. Our findings show that the “real” creative industries are still scarce and found mostly in fairly advanced urban regions. These industries are more likely to be an indicator than a driver of regional economic development. Meanwhile, those traditional businesses are much larger than creative industries and potentially contribute to regional productivity through consumption activities, thereby requiring different policy strategies.

Introduction

Economic activities that utilise individual creativity and talent, such as creative industries, are considered a relatively new instrument for urban and regional economic development in the context of “developing” countries (Barrowclough and Kozul-Wright 2008; De Beukelaer 2014; Fahmi, McCann, and Koster 2017; UNESCO and UNDP 2013). Various policy strategies are designated to promote these industries so as to stimulate economic development. Nevertheless, there has been an ongoing debate on whether paying special attention to these industries is likely to help increase economic outcomes. Potts and Cunningham (2008) describe that creative industries could theoretically deliver either positive, negative, or neutral impacts on economic growth. A number of empirical contributions show that creative industries deliver positive effects on regional economic development (e.g., Baum, O’Connor, and Yigitcanlar 2009; Boix-Domenech, De-Miguel-Molina, and Hervas-Oliver 2013; de-Miguel-Molina et al. 2012; Hong et al. 2014; Lee 2014; Marco-Serrano, Rausell-Koster, and Abeledo-Sanchis 2014; Piergiovanni, Carree, and Santarelli 2012). Creative industries potentially increase the regional capacity to generate new ideas, resulting in innovation that enhances regional productivity (Boix-Domenech and Soler-Marco 2015). The expansion of the creative sector accompanied by the higher wage rate reflects that this sector potentially makes increasingly important contributions to the regional economy. On the other side, this development might widen the inequality between the high skilled and the low skilled labour in the regional economy (see Liu and Xie 2013). Some studies also show that the role of creative industries in job creation is limited to a few specific places only (e.g., Bagwell 2008; Stam, de Jong, and Marlet 2008),

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confirming that these industries are not types of labour-intensive sectors which require a large amount of labour.

The discussion on the role of creative industries in regional development has overwhelmingly focused on the context of higher income countries. There is little published research on this topic in the context of “developing” countries, while the idea of creative industries is gradually embraced in these countries (Kong et al. 2006; Yusuf and Nabeshima 2005). It is yet unclear how important creative industries are in this context and to which degree these industries can be used as a tool for economic development. Compared to the developed economy, creative industries in developing countries might not be as competitive, in that the global markets of creative products are dominated by products from developed countries and China (Barrowclough and Kozul-Wright 2008; De Beuke-laer 2014). This implies that creative industries in developing countries might not produce as significant added value as those in the developed world. Nevertheless, it is worth noticing that “developing” countries comprise a group of nations with distinct characteristics and levels of socio-economic development, so the role of creative industries might vary across these countries (De Beukelaer 2014).

Despite the heterogeneity of development stages across developing countries, there are at least two similar conditions shared between them. First, deindustrialisation in general does not occur yet in these countries, whereby primary and secondary sectors still grow, although the service sector might play an increasing role in the economy (Rubalcaba, Aboal, and Garda 2016). It is thus important to identify the degree to which creative industries contribute to regional development, compared to larger sectors, such as manufacture. Second, the notion of creative industries is often interpreted differently, in that “crafts-intensive” businesses which are not always associated with innovation are included as creative industries (Fahmi, McCann, and Koster 2017; UNESCO and UNDP 2013). Although utilising cultural creativity in the economy is nothing new in these countries, especially Asian countries, they rather focus on highlighting “conservative” values as selling points (Kong et al. 2006; O’Connor 2005). Therefore, it is still unknown whether creative industries can be an effective tool for regional development in these contexts.

Indonesia is a typical example of a developing country that currently implements a set of policies to promote creative industries. The Indonesian government claims that these industries have contributed to approximately 7% of the national employment and GDP (MTCE 2014). However, long-established “traditional” cultural industries (e.g., batik and crafts), which tend to preserve heritage and traditional values, are included in the creative industries classification (Fahmi, Koster, and van Dijk 2016). These traditional cultural industries actually are different from the “real” creative industries, which emphasise the creation of new knowledge and innovation (e.g., architecture, design and IT-based industries). In fact, traditional cultural industries are much larger than the “real” creative industries. In this regard, differentiating between the two would help understand better their different needs and positions in the regional economy. Although the national government has encouraged local governments to promote creative industries in their localities, it is yet unclear to which degree creative industries, as well as traditional cultural industries, affect regional economic development. We thus argue that it is important to examine whether creative industries can drive regional economic development. In addition, since other sectors, such as manufacturing and mining companies, have been important contributors to the economy, we should also compare the impact of creative industries with these sectors. By understanding these matters, we would be able to determine whether the current policy strategy for supporting creative industries needs to continue.

In response to these questions, this paper aims to examine the degree to which creative industries stimulate regional economic development in the developing economy, particularly Indonesia. It

provides an insight into whether regional development strategies based on creative industries are feasibly implemented outside the developed world, especially in lower-middle income countries which have clearly different contexts from Western countries as well as Asian higher income countries, such as South Korea and China, which have been farther in the development of creative industries. In so doing, we provide empirical evidence on the impact of creative industries on economic growth at the regional level. Analysis at this level is needed because these impacts might not be distributed evenly and be shown in specific places only. Besides, this analysis suggests important policy implications for regional development, especially with regard to the extent to which creative and traditional cultural industries should be taken into account into regional development policies and what types of strategies should be designed for supporting both industries (see also Murphy, Fox-Rogers, and Redmond 2015).

This paper is structured as follows. In the following section, conceptual arguments on the role of creative industries in regional economic development are reviewed, followed by an overview of technique for modelling the impacts. A descriptive overview is then presented, followed by estimation results. This paper is concluded by a discussion on policy implications.

Creative Industries and Regional Economic Development

There is a huge interest in the role of creative industries in regional development. It has been hotly debated whether the government should pay special attention to this sector, whereas there is not always sufficient evidence showing the extent to which and the mechanism through which creative industries deliver impacts on regional economic growth and development.

Potts and Cunningham (2008) describe four models predicting how creative industries might deliver negative, positive as well as neutral impacts on economic growth. The first model, or the “welfare” model, describes that creative industries deliver negative impacts on economic growth because they use more resources than they create. In this case, creative industries are able to grow as facilitated by the transfer of resources, such as subsidies and political interventions. The second model, or the “competition” model, predicts that “creative industries are not economic laggards, nor providers of special goods of higher moral significance, but effectively ‘just another industry’ [...]” (p. 236). In this regard, the economic impact of creative industries is on par with all other sectors and thus, there is no need to develop special policy strategies for these industries, “just consistent application of policy mechanisms extended to other industries” (p. 237). The third model, or the “growth” model, assumes that creative industries “introduce novel ideas into the economy [...] or facilitate the adoption and retention of new ideas or technologies in other sectors [...]” (p. 237). The fourth model, or the “innovation” model, describes that the role of creative industries in the economy is not that they are an economic subset that drives economic growth, but rather they are part of the wider innovation system. In this model, creative industries “originate and coordinate change in the knowledge base of the economy” (p. 238). As such, according to these four models, there are open possibilities that creative industries deliver varying impacts on economic development. It is thus important to identify the actual impact of these industries, so policy strategies can be designed more effectively in line with local contexts and circumstances.

Mechanisms. As previously explained, creative industries might have varying impacts on economic growth. In the following, we summarise four potential mechanisms through which these impacts could be shown.

The first mechanism is simply a sectoral effect (Lee 2014), that is, creative industries generate relatively significant economic value. In line with the “growth” model, this possibly occurs through two alternative ways: supply- and demand-side forces (Potts and Cunningham 2008). The supply-side

explanation of this model stresses the export of new ideas from creative industries to the whole economy (Potts and Cunningham 2008). Creative industries generate innovative ideas that have large economic value, which then percolate to the economy (Hartley 2005; Stam, de Jong, and Marlet 2008). Creative industries also encourage new industries and market niches as well as stabilise existing industries. The demand-side explanation of this model is that the growth of the aggregate economy triggers an increase in demand for creative products or services (Potts and Cunningham 2008).

Second, related to the first mechanism, creative industries foster growth through spillover effects across sectors. This is to say, creative industries increase the productivity of other sectors which then lead to the growth of the whole economy (Hong et al. 2014; Lee 2014; Potts and Cunningham 2008; Stam, de Jong, and Marlet 2008). This occurs as creative industries interact, exchange ideas and collaborate with other industries. This process is particularly supported by urbanisation economies, that is, externalities resulted from a diversity of sectors which provide opportunities to gain benefits from co-location, the sharing of knowledge and the development of professional and social networks (Feldman and Kogler 2010; Jacobs 1969; Lazzeretti 2007; Lee 2014; Rosenthal and Strange 2003).

The third mechanism is that creative industries affect the economy through knowledge spillovers, but the exact role played by these industries is rather different. According to the “innovation” model, creative industries are not seen as a subset of the economy, but rather they are a complex evolving system that yields economic value by facilitating economic evolution and innovation. In this view, the contribution of creative industries is not in terms of relative economic value, but because they play a role in originating and coordinating changes in the knowledge base of the economy as well as in the coordination of new ideas or technologies. Creative industries do not affect economic growth directly, but rather they provide conditions that allow changes in economic order (Audretsch, Keilbach, and Lehmann 2006a,b; Potts and Cunningham 2008). This explanation is particularly relevant for developed economies, in which innovation is the main goal of development and knowledge-based economic activities have quite a high capability to develop and process new knowledge.

The fourth mechanism is that creative industries might have an amenity value that attracts skilled residents or tourists that will increase productivity (Lee 2014). This argument is related to the thesis of urban amenities that explains how the economy is growing, which is particularly related to creativity. In this view, economic growth is associated most notably with socio-cultural components, which provide intrinsic values and amenities needed by creative entrepreneurs (Florida 2003; Lazzeretti 2007; Pratt 2008). These components serve as a “buzz” that provides a preferable business climate and social contexts that stimulate creativity. Florida’s argument on this view suggests that social climate, as reflected by the “coolness” of place, social tolerance and technology, affects the economy, as it attracts more creative capitals, such as the creative class or creative industries (Florida 2003). There are criticisms towards this view, as the growth of creative industries is not only related to particular urban amenities, but also may correspond to a particular fast growing segment of creative industries (Mossig 2011).

To sum up, creative industries may trigger an increase in regional productivity by consumption activities as well as by introducing new ideas and values and then percolating them to the economy through sectoral and knowledge spillovers (see also Boix-Domenech and Soler-Marco 2015). It is worth noticing that socio-cultural and place characteristics are also crucial factors that influence these processes. These conceptual arguments need to be tested empirically and with this we can better design policy strategies for optimising the impacts. If creative industries deliver sectoral effects, we may consider these industries to be a “special sector.” Accordingly, if spillover effects are evident, policy strategies can be designed so as to facilitate the transfer of ideas and values as well as professional and social contacts.

Regional economic impacts of “creative industries” in the developing economy. Conceptual arguments described above are built upon specific contexts of developed countries. It is yet unclear to which degree these arguments are relevant beyond these contexts, in which creative industries are situated in less advanced economies and facilitated by less innovative technologies (see Yusuf and Nabeshima 2005). According to those conceptual arguments (e.g., the growth model), it is actually assumed that the number of creative industries is sufficiently large, so that these industries can deliver economic impacts (Potts and Cunningham 2008). Spillover effects of creative industries are shown since these industries are agglomerated (see de-Miguel-Molina et al. 2012; Hong et al. 2014; Rosenthal and Strange 2003). In order to form a cluster or concentration, the number of these industries needs to be sufficiently large, so there will be enough competitors as well as combinations of different ideas needed for innovation. Meanwhile, creative industries in developing countries are still rather small. It is thus possible that these industries are not a driver, but rather an “indicator” of economic development (De Beukelaer 2014). Furthermore, it is unknown whether creative industries in developing countries are able to take advantage of agglomeration economies. In order to gain benefits from knowledge spillovers, social contacts as well as a diversity of skills and ideas, firms need to possess an absorptive capacity, which is crucial to process new knowledge available in urban regions (Qian and Acs 2013).

Further to this, creative industries in developing countries might not always possess such an adequate capacity that facilitates them to benefit from new knowledge. As previously described, creative industries in this context often have different characteristics from those in the developed world. It is unclear whether they are able to generate novel ideas and thus provide a source of economic growth. Fahmi, Koster and van Dijk (2016) has discussed in depth the historical and conceptual definition of “creative industries” in the context of Indonesia, which is imported from the British concepts of such a term. The Indonesian government adopts the DCMS (2001) list of creative industries. In practice, long-established traditional business embedded in many regions, such as batik and crafts, are promoted as creative industries.

From a conceptual point of view, the government’s classification is not straightforward since these traditional cultural industries actually have different conceptual ideas than the term “creative industries”, which emphasise innovation, copyright and technology (Banks and O’Connor 2009; Galloway and Dunlop 2007; Garnham 2005). Traditional cultural industries might still need recent technologies that support their production activities. Yet, these industries have existed for a long time as regional identities, in which crafters have shared knowledge hereditarily and produce “exotic” products. Whilst creative industries attempt at generating new values and ideas, traditional cultural industries rather focus on promoting the uniqueness of local traditions, which might generate economic outcomes, but they pay less attention to originality and new knowledge generation (see also Kong et al. 2006; O’Connor and Xin 2006). This does not mean that traditional cultural industries are not creative, but they utilise a different source of creativity. Compared to creative industries which generally originate from individual creativity, traditional cultural industries utilise communal creativity, which originates especially from tradition. Since tradition is a collective good, these traditional products might not be protected by the same copyright regime as the one applied to knowledge-based and creative products (see Boateng 2011). Apart from this, it is worth noticing that these traditional cultural industries make up to the largest proportion of all “creative industries.”

Since we aim to measure the degree to which the idea of creative industries can be a feasible instrument for regional development in a developing country, such as Indonesia, we should reflect on these different conceptual ideas. There has been an ongoing debate on the definitional issue of creative industries. Many reject the binary opposition between “creative” and “cultural” industries, as the

idea of creative industries is historically rooted in the notion of cultural industries (e.g., Banks and O'Connor 2009). Other scholars criticise the idea of creative industries for using the concept of arts and cultural industries, but extending it beyond the boundary: it combines cultural industries, such as performing arts, with industries that have different characteristics, such as software and advertising (e.g., O'Connor 2009). Regardless of these controversies, we argue that in the context of Indonesia, the debate seems different. First, the Indonesian government does not adopt the term “cultural industries”, but “creative industries” and the “creative economy,” particularly the DCMS definitions of these terms (DCMS 2001). Second, although culture-based economic activities, which we refer to as traditional cultural industries, have been found for years in many regions in Indonesia, they cannot be equalled to the notion of “cultural industries” in the Western literature. Whilst cultural industries in the literature are usually associated with the function of cities as centres for cultural consumption and enjoyment (see Pratt 2009; Scott 1997), traditional cultural industries, notably in Indonesia, are not always situated in urban realms (Fahmi, Koster, and van Dijk 2016).

In this regard, for the context of Indonesia, and possibly in other countries that promote traditional businesses as creative industries, separating the “real” creative industries and traditional cultural industries seems justified, particularly to control for their potential different impacts. The “real” creative industries, which hold “innovative natures” (i.e., architecture, advertising, design, IT-based industries, multimedia, radio and television, publishing, visual, and recorded and performing arts), can thus be hypothesised to have different economic impacts than traditional cultural industries, which have existed for a long time.

We can offer a conceptual argument explaining how these impacts could be shown. Creative industries generally use and generate new ideas or designs and thus potentially yield larger economic value. However, in a developing country such as Indonesia, these industries are still quite small and therefore, their impact might not be significant (see also De Beukelaer 2014). Creative industries might not yet be a leading economic segment that coordinates the creation and diffusion of knowledge (cf. Potts and Cunningham 2008). Nevertheless, creative industries are likely to be part of a larger sector, notably knowledge-based economic activities, with which they interact and collaborate. The contribution of creative industries could be amalgamated in this larger sector through business transactions and other types of collaboration. If this is evident, policy strategies should be designed not only to incentivise creative industries, but also to encourage the development of knowledge-based sectors in general as well as collaboration and knowledge generation among them.

In comparison, traditional cultural industries may not look for new combinations and new uses of production factors. They may not be prominent in terms of innovation and the creation of new value. As these industries are not always focused on developing new ideas or designs and rather prioritise the preservation of traditional values, many of them would just follow consumption patterns without developing their products continuously. In Indonesia, as in many developing countries, traditional cultural industries constitute a large proportion of all firms, so their sectoral effect on the regional economy would clearly be reflected in the level of consumption or employment. By testing this hypothetical argument empirically, we can understand their potentially distinct impacts and thus, suggest policy strategies for supporting both creative and traditional cultural industries in the regions at their current development stage.

Methodology

Data. In order to assess the characteristics of creative industries and their impacts on regional economic growth, we adopted the 1996 and 2006 Economic Census data, the latest datasets available

from the BPS-Statistics Indonesia. These data provide information about the characteristics of firms (i.e. creative and traditional cultural industries), observed every ten years, but they are not panel data. There is an issue with regard to these datasets, in which the numbers of regions (*kota* and *kabupaten*) in 1996 and 2006 are not the same. To overcome this, newer established regions were merged to their parent regions. Data for other variables were also obtained from the BPS-Statistics Indonesia (see Table 1).¹ Due to missing values in different datasets, some regions were excluded from the analytical model: Bintan (was Riau Islands), Pontianak city, Minahasa, Kendari city, Manokwari, Paniai, and Nias.²

Model. An econometric model was designed to estimate the impact of creative industries on regional productivity growth. A dependent variable was selected so as to represent the outcome of regional development processes and reflect the relative economic competitiveness of the regions. For this, annual labour productivity growth was employed (see Hague, Hague, and Breitbach 2011). Labour productivity was measured as gross regional product (GRP) per employment in the regions, or in other words, how much economic output yielded by each employed person.

Ideally, the econometric model would show not only associations, but also causal relations, or in other words, the impacts of creative industries on regional productivity growth. For this, the variables were lagged, in which average annual growth rates were calculated for the period between 2007 and 2012.³ We used growth rates instead of levels for several reasons. First, to a certain extent, growth rates better represent the outcomes of the development process, in a sense that we can see how much additional outcome produced in a region during a certain period (see Hague, Hague, and Breitbach 2011). Growth rates also reflect the acceleration, or deceleration, of the process of regional development. Second, according to the Solow and endogenous growth theories, territories might not be distributed evenly around their steady states and income differences might persist indeterminately (Mankiw, Romer, and Weil 1992). As such, following Barro (1991) and Mankiw et al. (1992) in our growth regression models, the initial level of regional productivity was included, and it is hypothesised to have a negative sign, reflecting convergence across regions.

To correct for potential spatial autocorrelations that may exist between neighbouring regions, spatial econometrics was applied. We followed both the general-to-specific and the specific-to-general framework described by Elhorst (2013). A first-order Queen contiguity spatial weight matrix was used, but in this approach 12 localities, especially those on remote islands, did not have neighbours. To overcome this, we corrected the weight matrix by adding neighbours as if two regions were connected by bridge or frequent local boat services.

Explanatory and control variables. An integral part of our empirical strategy is to distinguish between the two flavours of creative industries: traditional cultural industries and “real” creative industries. They are generally mixed by the Indonesian government, but given their different structures and aims, they are expected to have different impacts on regional economic development. Though conceptually clear, the empirical differentiation of the two is less straightforward. We used the classification as developed in Fahmi, Koster, and van Dijk (2016), in which this issue is elaborated in depth. Creative industries were classified according to the Indonesian industrial classification system (KBLI), including advertising, architecture and design, visual and recorded arts, radio and television, publishing, IT-based and software industries, and research and development as creative industries. Meanwhile, crafts, batik and antiques were categorised into traditional cultural industries (see Appendix Table A1).⁴

Other variables were used to control for other factors that determine regional growth and development in these specific contexts. As explained before, the initial levels of regional development

TABLE 1. VARIABLES USED IN THE ANALYSIS.

Variable	Mean	SD	Source
Share creative industries (CI) (2006)	0.006	0.004	Calculated from raw data Economic Census 2006 ^a
Lagged growth CI (1996–2006)	0.071	0.052	Calculated from raw data Economic Census 1996 ^b , 2006 ^a
Share traditional cultural industries (CULT) (2006)	0.065	0.067	Calculated from raw data Economic Census 2006 ^a
Lagged growth CULT (1996–2006)	0.059	0.083	Calculated from raw data Economic Census 1996 ^b and 2006 ^a
Share manufacturing firms (2006)	0.138	0.077	Calculated from raw data Economic Census 2006 ^a
Share oil and gas firms (2006)	0.00004	0.00037	Calculated from raw data Economic Census 2006 ^a
Share trade firms (2006)	0.345	0.064	Calculated from raw data Economic Census 2006 ^a
The presence of universities (established in 2006 or earlier)	0.350	0.347	Recapitulated from Pangkalan Data Pendidikan Tinggi ^c
Population density	0.016	0.051	Calculated from INDO-DAPOER ^d
Annual labour productivity growth (2007–2012)	0.038	0.033	Calculated from INDO-DAPOER ^d
Annual labour productivity growth in manufacture (2007–2012)	0.012	0.074	Calculated from INDO-DAPOER ^d
Annual labour productivity growth in service (2007–2012)	0.019	0.048	Calculated from INDO-DAPOER ^d
Annual skilled labour growth (2007–2012)	0.105	0.078	Calculated from Sakernas 2007 ^e and 2012 ^f data
Initial level of labour productivity (2007)	0.018	0.023	INDO-DAPOER ^d
Initial level of productivity in manufacture (2007)	0.038	0.065	INDO-DAPOER ^d
Initial level of productivity in service (2007)	0.033	0.029	INDO-DAPOER ^d
Initial level of skilled labour (2007)	9.477	0.919	Calculated from Sakernas 2007 ^e and 2012 ^f data
The coverage of good mobile signals (% area)	0.309	0.215	Calculated from Potensi Desa 2005 ^g data
Ratio of internet café (<i>warnet</i>) in 1,000 inhabitants	0.041	0.058	Calculated from Potensi Desa 2005 ^g data

TABLE 1. *CONTINUED*

Variable	Mean	SD	Source
Related variety	1.184	0.114	Calculated from raw data Economic Census 2006 ^a

Note: Data in log modulus form.

Data source: ^aBPS-Statistics Indonesia, can be requested at <http://microdata.bps.go.id/mikrodata/index.php/catalog/20/study-description>.

^bBPS-Statistics Indonesia, can be requested at <http://microdata.bps.go.id/mikrodata/index.php/catalog/473/study-description>.

^cSee <http://forlap.dikti.go.id/perguruan tinggi>.

^dIndonesia Database for Policy and Economic Research (INDO-DAPOER) is managed by The World Bank and retrieves datasets from BPS-Statistics Indonesia, available from <http://databank.worldbank.org/data/reports.aspx?source=1266>.

^eBPS-Statistics Indonesia, can be requested at <http://microdata.bps.go.id/mikrodata/index.php/catalog/305>.

^fBPS-Statistics Indonesia, can be requested at <http://microdata.bps.go.id/mikrodata/index.php/catalog/434>.

^gBPS-Statistics Indonesia, can be requested at <http://microdata.bps.go.id/mikrodata/index.php/catalog/447>.

indicators were included. Some variables represented other important economic sectors, including manufacturing industries, oil and gas companies, and trade firms. We included lagged growth rates of creative and traditional cultural industries (1996–2006), which represent regions where these industries had rapidly grown. Regions which have high lagged growth rates are assumed to have already a specific “buzz” factor that facilitates the development of such industries. We also controlled for other potential determinants of regional growth and development, including agglomeration economies and human capital (Storper and Scott 2008). Population density was used to represent and catch various aspects of agglomeration economies, such as urbanity, externalities of scale and localisation. To represent human capital institutions, a dummy variable representing the presence of universities in a region was used.

Showing sectoral and spillover effects. Following our theoretical framework, we attempted at showing sectoral and spillover effects of creative and traditional cultural industries. The sectoral effect on the overall economy can be indicated by the association between the share of these industries and labour productivity growth in the aggregate economy. The sectoral effect is possibly shown as these industries increase productivity in certain sectors (Hong et al. 2014; Lee 2014; Potts and Cunningham 2008). For this we used labour productivity growth in several economic sectors, including manufacturing and service sectors, as dependent variables. Ideally, to assess the potential indirect and wider effects of creative industries, we should also employ, as the dependent variable, productivity growth of an industry that interacts with and receives knowledge spillovers from creative industries. However, the productivity measure at the level of such an industry (e.g., knowledge-based industry) is not available. As an alternative, we used the growth of skilled labour, that is, labour with college degrees, as a dependent variable. It is

assumed that creative industries are more skill-intensive than other sectors. By using this dependent variable, we can also check whether the presence of creative industries is associated with an increase in demand for skilled labour, thereby providing greater opportunities for regional development.

In addition, we can observe spatial spillover effects of creative industries in spatial econometric models, especially spatial Durbin impact measures (see Lesage and Fischer 2008). However, due to data unavailability, it is not possible to estimate knowledge spillover effects of creative industries.

Tackling potential endogeneity issues and indicating the causality. Despite the strength of the growth regression, it might have endogeneity problems (Mankiw, Phelps, and Romer 1995). Creative industries could also be endogenous to growth, as they are usually located in growing regions. Although we partially tackle simultaneity problems by using time-lagged variables, we also performed two-stage least squares (2SLS) instrumental variable analysis (IV). With the IV model we can also address the causality issue and determine whether creative industries are a “driver” or “follower” of regional productivity growth (see Marco-Serrano, Rausell-Koster, and Abeledo-Sanchis 2014).

Instruments were chosen as they are correlated with the share of creative industries, but are not directly correlated with labour productivity growth (see Appendix Table A2). These instruments were selected to be proxies for growing regions, where creative industries might benefit from rather established economic networks and urban amenities (Fahmi, Koster, and van Dijk 2016; Lazzeretti 2007). For this, the coverage of good mobile signals and the ratio of internet café in 1,000 inhabitants were employed, as they represent how well-provided infrastructure and facilities in the regions. Besides, related variety was employed since it reflects urbanisation economies and the potential networks between economic activities in the regions. Conceptually, related variety might affect regional economic growth directly (e.g., Frenken, Van Oort, and Verburg 2007), but in our case it is not correlated with regional productivity growth and is not significant when being included in regression models. Therefore, we employed related variety since

FIGURE 1. SECTORAL CONTRIBUTION TO NATIONAL EMPLOYMENT AND GDP 2010 (GOVERNMENT VERSION).
Source: Illustrated from MTCE (2011)

it supplements other instruments which aim to represent regions which have grown and provided preferable economic conditions.

General Overview of the Role of Creative Industries in Indonesia

The term “creative industries” has gained rising popularity in Indonesia since the beginning of the new millennium. The emergence of creative industries can also be associated with the 1998 East Asian crisis which delivered a substantial impact on the Indonesian economy; many firms closed down and unemployment increased. To earn a living many people started their own businesses as entrepreneurs. At the same time, the service sector has become more important and the national economy has diversified (see Fahmi, Koster, and van Dijk 2016). The idea of promoting creative industries has risen as a new alternative to fostering economic development, in line with the advance in information technology and globalisation. Yet, creative industries are not a major sector in Indonesia’s economic structure and they do not offset the ongoing job losses in the declining manufacturing sector. As seen in Figure 1, agriculture still creates 38% of employment and manufacturing contributes to about 21% of GDP. Mining industries, especially oil and gas, are the most productive sectors. They make up only 1.2% of total employment, but their contribution to GDP is 11%.

The Indonesian government reported that creative industries, combined with traditional cultural industries, contribute to around 7% of national employment and GDP (see Figure 1). Creative industries are also predicted to be a new source of economic growth (MTCE 2014). However, if we separate both types of industries, it appears that “real” creative industries only make up a small proportion (less than 1% of the total number of firms), while traditional cultural industries are much larger (around 7%) (see Table 2). It is thus to be expected that both types of industries deliver different impacts on regional economic development.

During 1996–2006, both creative and traditional cultural industries have higher growth rates of firm establishments than other industries (see Table 2). This reflects that both industries have potentials to contribute to regional development. Nevertheless, creative industries are still quite small and thus, their sectoral effect on employment might not really be significant. Traditional cultural industries are much larger, so their direct contribution to employment is clearly larger, too. Although creative industries are relatively small, they possibly generate large added value through spillover effects since they generate new ideas and knowledge. It is important noticing that creative industries, as well as traditional cultural industries, are not distributed evenly. As such, economic impacts of both industries might not be shown everywhere. As presented in Figure 2, creative industries are concentrated in specific regions, especially on Java Island and major cities on other islands. Therefore, it is important to examine whether the impact of creative industries is mainly shown in these regions only. If the impact is only shown in these relatively advanced urban regions the government’s view on obligating all local governments to promote creative industries in their own regions would be less effective.⁵ If the government wishes to promote traditional cultural industries, in line with the effort to preserve culture and heritage, policy strategies should be designed differently according to the specificities of these industries.

From the explorative data analysis and the conceptual background, it becomes clear that creative and traditional cultural industries potentially contribute differently to regional economic development in Indonesian regions. Creative industries are quite scarce and still small, so the direct employment effects are small. Creative industries are mainly found in rather advanced regions, so that we should examine whether they deliver economic impacts outside these regions. As traditional cultural industries are larger and more widespread across regions, we should elaborate how they have contributed

TABLE 2. COMPOSITION OF CREATIVE AND TRADITIONAL CULTURAL INDUSTRIES.

Industries	1996		2006		Average Annual Growth
	Frequency	%	Frequency	%	
Advertising and marketing	2,431	0.03%	2,564	0.02%	0.53%
Architecture and design	4,144	0.05%	2,837	0.02%	−3.72%
Visual and recorded arts	15,485	0.17%	20,585	0.16%	2.89%
Radio and television	4,177	0.05%	2,981	0.02%	−3.32%
Performing arts	8,666	0.09%	18,259	0.14%	7.74%
Publishing	18,237	0.20%	37,920	0.29%	7.59%
IT, software and computer services	2,580	0.03%	3,042	0.02%	1.66%
Research and development	1,639	0.02%	1,031	0.01%	−4.53%
Creative industries (1)	57,359	0.63%	89,219	0.69%	4.52%
Antiques	1,396	0.02%	1,379	0.01%	−0.12%
Crafts	529,772	5.79%	1,064,649	8.22%	7.23%
Traditional cultural industries (2)	531,168	5.80%	1,066,028	8.23%	7.21%
Creative and traditional cultural industries (1 + 2)	588,527	6.43%	1,155,247	8.92%	6.98%
Fashion (3)	51,322	0.56%	102,339	0.79%	7.15%
Other industries (4)	8,514,445	93.01%	11,696,736	90.29%	3.23%
All industries (1 + 2 + 3 + 4)	9,154,294		12,954,322		3.53%

Source: Fahmi, Koster, and van Dijk (2016), also calculated from the 1996 and 2006 Economic Census raw data.

to regional economic growth and how we can optimise these impacts. In the same vein, as other sectors are still important contributors to the regional economy, they should also be taken into account.

Estimation Results

In this section, we present the result of the econometric analysis which estimates the impacts of creative and traditional cultural industries on regional productivity growth and skilled labour growth. We first present the result of the main models which were developed following spatial econometrics methods by Elhorst (2013). Ordinary least square regressions (OLS) were first estimated, followed by running spatial diagnostics. Spatial models, including spatial error (SEM), spatial lag (SAR) and spatial Durbin (SDM) models, were then estimated, followed by performing likelihood ratio (LR) tests. By spatial diagnostics and LR tests, a conclusion could be drawn on which spatial models should be chosen. As creative industries might be endogenous to growth, instrumental variable analysis was also performed. Subsequently, we present the results of robustness analysis, which examines whether the impact is still shown when Javanese regions are excluded. This analysis needs to be conducted since creative industries are overrepresented in Java and the impacts of these industries may only be shown on this island only.

FIGURE 2. REGIONAL DISTRIBUTION OF CREATIVE AND TRADITIONAL CULTURAL INDUSTRIES.

In general, both creative and traditional cultural industries are positively associated with regional productivity growth, but different explanations are offered. Creative industries are generally situated in rather advanced economies where they build economic linkages and perform transactions with other tertiary sectors. In comparison, the economic contribution of traditional cultural industries most likely corresponds to their relative size and consumption patterns in the regions. Our estimation results also show that other sectors, including manufacture as well as oil and gas companies are still important contributors to regional economic development.

Main results. The main results are presented in Table 3. As shown in Model 1, all coefficients for the share of creative industries are positive and statistically significant. The direct SDM coefficient for traditional cultural industries is also positive. As such, both creative and traditional cultural industries are positively associated with labour productivity growth in the aggregate economy. Meanwhile, both types of industries are not associated with labour productivity growth in the manufacturing sector (see Model 2), reflecting that there are no economic linkages, nor sectoral spillovers, between both types of industries and manufacture. In Model 3 the SDM impact coefficient for creative industries is positive and significant, while the share of traditional cultural industries is not significant. This suggests that creative industries have linkages with the service sector, possibly in a form of “supplier-buyer” relationships (see Fahmi, Koster, and van Dijk 2016). As such, creative industries may help boost the productivity of the tertiary sector, or alternatively, the growing service industry may help creative industries increase their productivity (Flew and Cunningham 2010). In comparison, traditional cultural industries might have less economic linkages with and deliver no spillovers to tertiary economic activities.

TABLE 3. MAIN MODELS.

	Model 1: Annual labour productivity growth (2007–2012)				Model 2: Annual labour productivity growth in manufacture (2007–2012)				Model 3: Annual productivity growth in services (2007–2012)			
	SDM Impact		OLS		SDM Impact		OLS		SDM Impact		OLS	
	B (Robust SE)	Direct	Indirect	Total	B (Robust SE)	Direct	Indirect	Total	B (SE)	Direct	Indirect	Total
Share CI (06)	2.460(0.60)***	1.672**	2.433**	4.105***	-0.890(1.51)	-2.705	1.641	-1.064	3.594(0.92)***	3.873***	-2.953*	0.920
Lag growth CI (96-06)	-0.022(0.04)	-0.047	-0.100*	-0.147*	-0.139(0.12)	-0.153	0.379**	0.226	-0.044(0.06)	-0.038	-0.050	-0.088
Share CULT (06)	0.101(0.03)***	0.092**	0.009	0.102	0.037(0.11)	-0.035	0.010	-0.025	-0.038(0.06)	-0.025	0.046	0.021
Lag growth CULT (06)	0.004(0.02)	-0.012	0.038	0.026	0.016(0.05)	-0.025	0.037	0.011	0.048(0.04)	0.018	0.085	0.103
Share Manufacture (06)	0.059(0.03)**	0.065*	0.002	0.068	-0.095(0.06)	-0.066	-0.118	-0.184*	-0.040(0.05)	-0.008	-0.057	-0.065
Share Oil & Gas (06)	5.335(1.28)***	6.284	25.099***	31.383***	29.898(3.57)***	31.945***	-36.694	-4.749	-1.296(7.21)	-0.431	5.665	5.234
Share Trade (06)	0.021(0.04)	0.069	-0.064	0.004	-0.109(0.17)	-0.099	-0.055	-0.155	-0.158(0.06)***	-0.113*	-0.051	-0.165
University dummy (06)	-0.004(0.00)	-0.004	0.004	0.000	0.000(0.01)	-0.005	0.007	0.002	0.000(0.01)	-0.002	0.006	0.004
Population density (06)	0.020(0.03)	0.013	-0.094	-0.081	-0.022(0.06)	-0.016	0.229	0.213	0.050(0.06)	0.055	0.201	0.256
Initial level of productivity (07)	-0.752(0.17)***	-0.721*	-0.197*	-0.918***	-0.294(0.08)***	-0.317***	0.067	-0.250***	-0.577(0.11)***	-0.566***	-0.107	-0.673**
Constant	0.016(0.02)				0.085(0.05)				0.078(0.03)***			
Rho				0.161**				0.029				0.183**
N	285			285	285			285	285			285
(Adjusted/Nagelkerke) R ²	0.312			0.403	0.071			0.150	0.135			0.214
F	13.85***				3.166***				5.44***			
Mean VIF	1.60				1.573				1.60			
<i>Spatial diagnostics</i>												
Moran's I	3.43***				0.94				2.98***			
LM error	9.80***				0.46				7.26***			
LM lag	16.12***				0.04				8.05***			
RLM error	0.18				2.40				0.03			
RLM lag	6.50**				1.98				0.82			
<i>SDM model test</i>												
LR test SAR				16.50*				14.60				9.08
LR test SEM				20.99**				15.04				9.10

Note: All variables in log modulus form. Standard errors in parentheses. *** significant at 1%, ** significant at 5%, * significant at 10%.

TABLE 4. REGRESSIONS WITH THE GROWTH OF SKILLED LABOUR AS THE DEPENDENT VARIABLE.

	Model 4: Annual skilled labour growth (2007–2012)			
	OLS B(SE)	SDM Impacts		
		Direct	Indirect	Total
Constant	0.334(0.07)***			
Share CI (06)	−1.434(1.46)	−2.922*	10.060***	7.138***
Lag growth CI (96–06)	0.005(0.10)	−0.023	0.073	0.049
Share CULT (06)	0.103(0.09)	0.041	−0.053	−0.013
Lag growth CULT (96–06)	−0.104(0.06)*	−0.086	0.015	−0.072
Share Manufacture (06)	−0.017(0.07)	−0.034	0.037	0.004
Share Oil & Gas (06)	−9.350(11.39)	−11.333	3.801	−7.532
Share Trade (06)	0.286(0.10)***	0.145	0.195	0.340**
University dummy (06)	0.045(0.01)***	0.050***	−0.022	0.028
Population density (06)	0.083(0.09)	0.087	0.168	0.255
Initial level of skilled workers (07)	−0.035(0.01)***	−0.036***	−0.015	−0.051***
Rho		0.100		
N	285	285		
R2	0.1817	0.29349		
F	7.307***			
Mean VIF				
<i>Spatial diagnostics</i>				
Moran's I	2.458***			
LM error	4.7216**			
LM lag	6.3017**			
RLM error	0.15547			
RLM lag	1.7356			
<i>SDM model test</i>				
LR test SAR	25.763***			
LR test SEM	26.26***			

Note: All variables in log modulus form. Standard errors in parentheses.

*** Significant at 1%, ** Significant at 5%, * Significant at 10%.

Table 4, which presents the results using the share of highly skilled people in the workforce as the dependent variable, confirms that creative industries have little direct effects. In fact, in Model 4 the SDM direct coefficient of the share of creative industries is negative. In contrast, the indirect and total impact coefficients for the share for creative industries are positive and significant at 5%. Although this result calls for a rather complex interpretation, we can affirm that creative industries play a role in generating a regional demand for skilled labour, particularly by facilitating the development in other industries. Unfortunately, the model set-up precludes any precise statements on how creative industries facilitate these indirect positive effects. Meanwhile, the coefficient for traditional cultural industries in this model is not significant. This indicates that these industries might not be as skill-intensive as creative industries and do not influence the demand for skilled labour.

Other sectors also appear to be important contributors to the regional economy. The SDM direct coefficient for manufacture in Model 1 is positive, but only significant at 10%. The share of trade is positively associated with skilled labour growth. The share of oil and gas companies is also associated with labour productivity growth in the overall economy as well as in the manufacturing sector. This confirms that oil and gas companies are important engines of regional development. In line with our descriptive overview (see Figure 1), oil and gas companies generate quite a large added value and boost productivity in the regions where they are located. It also appears that the impact of these companies is potentially much larger than creative industries. This is shown by the coefficient for share of oil and gas companies which is much larger, in which an additional 0.01% of oil companies is associated with a total impact of 0.31% increase in labour productivity growth, while an additional 0.01% of creative industries is likely to increase 0.04% of growth (see Model 1).

We also included lagged growth rates of creative and traditional cultural industries (1996–2006) in the model. It is assumed that regions with high lagged growth rates already have a “buzz” factor that facilitates creative industries to grow, thereby having a higher chance to boost regional productivity growth.⁶ However, the direct and total impact coefficients of these lagged growth rates were not significant in almost all the models.

Furthermore, the initial level of labour productivity (2007) used in each model is negative and significant (see Table 3). This is in line with our hypothesis that this initial level is negatively associated with growth rates, indicating convergence in regional productivity growth (Barro 1991; Mankiw, Romer, and Weil 1992). Meanwhile, other control variables, including population density and university dummy, are not significant in these main models.

To sum up, creative industries are positively associated with regional productivity growth in the aggregate economy as well as the tertiary sector. These industries are also indicated to be associated with skilled labour growth. Yet, it needs to be examined further whether this association implies that creative industries drive, or rather just follow, regional productivity growth. Traditional cultural industries are also positively associated with productivity growth in the overall economy, showing that although these industries pay less attention to innovation and new knowledge, they still potentially contribute to the regional economy. Considering the nature of traditional cultural industries that do not certainly develop their products and designs, we can argue that these industries contribute to regional productivity by following consumption patterns, in a sense of taking advantage of consumers who are interested in “exotic” traditional products. Furthermore, other sectors, especially manufacturing as well as oil and gas companies, are still important contributors to regional productivity growth. This is to say, regional development should be governed not only to promote a specific sector (such as creative industries) as a “growth pole” (see Hague, Hague, and Breitbach 2011; Pike, Rodríguez-Pose, and Tomaney 2006), but also to consider all components of the economy which may relate to each other.

Creative industries: driver or indicator? As described in the previous part, the share of creative industries is positively associated with regional productivity growth and skilled labour growth (see Tables 3 and 4). However, as creative industries may be endogenous to growth, we cannot straightforwardly state that this association automatically means “effects” (see also Marco-Serrano, Rausell-Koster, and Abeledo-Sanchis 2014). To correct for these endogeneity problems and address this causality issue, an IV analysis was conducted. As shown in Table 5, the results of first-stage regression show that instruments used in the analysis are strong ($R^2 > 0.6$, $F > 35$). However, Durbin and Wu-Hausman tests are not significant, showing that the share of creative industries is not endogenous. This result indicates that although creative industries are exogenous and potentially spurs an increase in regional productivity, they still heavily benefit from economic conditions in the regions

TABLE 5. INSTRUMENTAL VARIABLE ANALYSIS (2SLS).

	Model 1A: Annual labour productivity growth (2007–2012)	Model 2A: Annual labour productivity growth in manufacture (2007–2012)	Model 3A: Annual labour productivity growth in service (2007–2012)	Model 4A: Annual skilled labour growth (2007–2012)
	B (Robust SE)	B (Robust SE)	B (SE)	B (Robust SE)
Share CI (06)	1.989 (1.18)*	–1.718(2.46)	4.207(1.50)***	–0.079(2.67)
Lag growth CI (96–06)	–0.019(0.04)	–0.134(0.11)	–0.050(0.06)	–0.010(0.11)
Share CULT (06)	0.095(0.03)***	0.025(0.11)	–0.030(0.06)	0.140(0.10)
Lag growth CULT (06)	0.001(0.02)	0.009(0.05)	0.052(0.04)	–0.101(0.07)
Share Manufacture (06)	0.049(0.04)	–0.116(0.07)	–0.027(0.05)	0.021(0.09)
Share Oil & Gas (06)	5.677(1.49)***	30.631(4.19)***	–1.700(7.12)	–11.404(12.74)
Share Trade (06)	0.013(0.04)	–0.122(0.16)	–0.148(0.06)**	0.354(0.11)***
University dummy (06)	–0.003(0.00)	0.002(0.01)	–0.002(0.01)	0.047(0.02)***
Population density (06)	0.027(0.04)	–0.009(0.07)	0.042(0.06)	0.075(0.11)
Initial level of productivity (07)	–0.743(0.17)***	–0.296(0.08)***	–0.594(0.11)***	–0.041(0.01)***
C	0.022(0.02)	0.097(0.06)*	0.070(0.03)**	0.358(0.08)***
N	285	285	285	285
R ²	0.334	0.103	0.164	0.209
Endogeneity tests				
Durbin/Robust chi ² (2)	0.25	0.27	0.26	0.53
Wu-Hausman/Robust F(1, 273)	0.24	0.27	0.25	0.51
First-stage regression				
First-stage R ²	0.64	0.63	0.65	0.66
First-stage F (3, 272)	38.61***	37.98***	50.40***	52.70***
Overidentification tests				
Sargan chi ²			9.50***	3.78
Basmann chi ²			9.38***	3.65
Score chi ²	4.28	3.62		

Notes: All variables in log modulus form. Standard errors in parenthesis.
*** Significant at 1%, ** Significant at 5%, * Significant at 10%.
Instrumented: Share CI. Instruments: area coverage of good mobile signals (%), ratio of internet café in 1,000 inhabitants, related variety.

that facilitate their activities. Although endogeneity issues cannot fully be solved in this analysis, both main and IV models point to similar results. In this respect, there is no strong evidence confirming creative industries to be a driver of regional productivity growth. This confirms our descriptive overview which shows that these industries are yet quite small, so they have a rather low opportunity to drive productivity growth through sectoral effects.

Further to this, we cannot straightforwardly argue that creative industries spur growth through sectoral spillover effects, as predicted by conceptual arguments (cf. Lee 2014; Potts and Cunningham 2008). The reason is that it is unclear whether creative industries act as frontrunners which guide and initiate the transfer of new values to other sectors, or rather, they take advantage of being co-located with other economic activities that produce innovative values. Considering the significance of the share of creative industries in Model 3, it is possible that creative industries are part of bigger economic activities which share ideas and values, and benefit from each other, especially in the tertiary sector.

In line with this, a similar interpretation applies to the significant SDM indirect impact coefficient for creative industries in Model 1 and Model 4. Creative industries might not really affect productivity growth in neighbouring regions. Rather, the positive sign might illustrate a complex development process and mobility of skilled workers occurring between transboundary regions. An increase in productivity growth in neighbouring regions might not solely correspond to creative industries, but also to all sectors and labour markets that have economic chains between these regions.

In conclusion, creative industries are more likely to be an indicator, than a driver, of regional productivity growth in a developing country, such as Indonesia (see also De Beukelaer 2014). Creative industries are situated in relatively advanced regions and it is impossible to disentangle their economic impacts solely, as these industries are interrelated with other sectors. In other words, creative industries appear to be part of a specific type of economic activities currently growing in Indonesian regions, such as knowledge-based service industries, which are to be found mostly in relatively advanced urban realms.

Robustness check. Creative industries are strongly overrepresented on Java Island and thus, the economic contribution of these industries might only be shown on this island. For this reason, the robustness analysis was performed to check whether when Javanese regions are excluded the main conclusion is still relevant (see results in Table 6).⁷

Generally speaking, there are slight changes in coefficient signs showing a difference with the main results, most notably the share of creative industries. The percentage of creative industries is not significant in Models 1B, 3B, and 4B simulating labour productivity growth in all sectors, productivity growth in service industries and skilled labour growth respectively. These results indicate that the association between creative industries and regional economic growth, as explained previously, seems only evident on Java Island where creative industries are overrepresented. The share of traditional cultural industries remains positive and significant in Model 1B, showing that these industries are associated with productivity growth in the regions outside Java. In addition, we found that share of oil and gas companies becomes insignificant in these robustness models.

Overall, this analysis shows that determinants of regional economic development on Java Island differ from those on other islands, as they might have different levels of socio-economic development. Our findings also suggest that regional development strategies based on creative industries would be most relevant for Javanese cities only. In comparison, traditional cultural industries would appear a more relevant instrument for regional development outside Java, as these industries are also distributed in regional centres and rural areas.

TABLE 6. ROBUSTNESS CHECK.

	Model 1B: Annual labour productivity growth (2007–2012)	Model 2B: Annual labour productivity growth in manufacturing (2007–2012)	Model 3B: Annual labour productivity growth in services (2007–2012)	Model 4B: Annual skilled labour growth (2007–2012)
	OLS	OLS	OLS	OLS
	B (Robust SE)	B (Robust SE)	B (SE)	B(SE)
Share CI (06)	0.684(0.89)	–3.024(2.90)	1.557(1.33)	1.925(1.94)
Lag growth CI (96–06)	–0.045(0.04)	–0.100(0.14)	–0.065(0.07)	0.070(0.10)
Share CULT (06)	0.086(0.03)***	–0.006(0.14)	–0.044(0.07)	0.227(0.10)**
Lag growth CULT (06)	–0.011(0.03)	–0.005(0.06)	0.035(0.05)	–0.068(0.07)
Share Manufacture (06)	0.043(0.04)	–0.115(0.09)	–0.105(0.06)	0.108(0.09)
Share Oil & Gas (06)	30.375(29.98)	62.553(58.12)	21.275(41.29)	29.947(58.42)
Share Trade (06)	0.061(0.04)	–0.026(0.22)	–0.163(0.08)**	0.334(0.11)***
University dummy (06)	–0.001(0.01)	–0.013(0.01)	–0.004(0.01)	0.044(0.02)**
Population density (06)	0.015(0.01)	–0.033(0.03)	0.052(0.06)	0.066(0.09)
Initial level of productivity or labour (2007)	–1.078(0.21)***	–0.385(0.09)***	–1.048(0.26)***	–0.033(0.01)***
Constant	0.017(0.02)	0.075(0.06)	0.114(0.04)***	0.252(0.09)***
N	178	178	178	178
Adjusted R ²	0.387	0.067	0.068	0.121
F	12.19***	2.28**	2.29*	3.44***
Mean VIF	1.50	1.48	1.46	1.49
<i>Spatial diagnostics</i>				
Moran's I	1.52*	0.49	1.74**	0.79
LM error	1.40	0.04	2.00	0.22
LM lag	1.05	0.22	1.96	0.97
RLM error	0.41	2.84*	0.06	1.73
RLM lag	0.06	3.02*	0.01	2.48

Notes: All variables in log modulus form. Standard errors in parenthesis.
*** significant at 1%, ** Significant at 5%, * Significant at 10%.

Discussion and Conclusions

This paper examined the degree to which creative industries stimulate regional economic development in the context of a developing country, Indonesia. In so doing, we have provided empirical evidence on the extent to which creative industries deliver impacts on regional productivity growth. It is worth noticing that creative industries in developing countries, particularly in Asia, have different characteristics from those in the developed world (see Kong et al. 2006; O'Connor and Xin 2006). The Indonesian government promotes traditional businesses, such as batik and crafts, as creative industries, although they pay less attention to the “innovative features” of creative industries (Fahmi, Koster, and van Dijk 2016). In our analysis we should thus separate the “real” creative industries and “traditional cultural” industries, as they have different characteristics and development paths, and potentially deliver different impacts. Traditional cultural industries (about 7%) are, in fact, much larger than creative industries (less than 1% of all firms). As such, although the former industries pay less attention to innovation, they also have a potential to stimulate regional economic development.

Our findings show that creative industries are more likely to be an indicator, rather than a driver, of regional economic development. These industries are limitedly found in rather advanced regions, especially major cities in Java, where regional economies are rather advanced and supported by better facilities and technologies. It is difficult to disentangle the contribution of creative industries to regional productivity, and vice versa. Creative industries, in this respect, appear to be an indicator where similar types of economic activities, such as knowledge-based or skill-intensive businesses, are also located and involved in economic linkages. Creative industries stimulate productivity as well as benefit from other economic activities, with which they conduct business transactions or even collaborate and share new ideas. Further to this, regional development strategies based on creative industries appear most relevant for rather advanced regions, such as Javanese cities. It is equally important to pay attention to other important sectors, such as manufacturing and mining activities, which have been proven to contribute to regional growth.

Traditional cultural industries are also positively associated with regional productivity growth, also outside Javanese regions. However, since these industries pay less attention to the development of ideas and designs, we may put forward a different explanation: they contribute to regional productivity by following consumption patterns. These industries are not as skill-intensive as creative industries and produce exotic products, which clearly have specific market segments, too. This suggests that traditional cultural industries can also be an instrument for regional development both in and outside Javanese regions, but they require a different set of policy strategies.

Further to this, our findings suggest that “creative industries,” in a sense of economic activities which emphasise innovation and new knowledge creation, can be an instrument for development policies in a developing country, such as Indonesia, although only in specific regions. There are enormous socio-economic differences within the country, so regional development strategies based on creative industries will not be feasible everywhere. Considering creative industries might be part of other economic activities that are concurrently involved in regional development processes, we should not design policy strategies in a way to regard these industries as a “growth pole” (see Hague, Hague, and Breitbach 2011; Pike, Rodríguez-Pose, and Tomaney 2006). This is to say, regional development strategies should be designed by considering place-based specificities, local and inter-regional sectoral linkages as well as social relationships between economic actors. The inclusion of creative industries in regional development policies is thus not an act of “copy-paste” policy

discourse, but rather, on the basis of the assessment to local potentials and opportunities (see Fahmi, McCann, and Koster 2017; Kong et al. 2006).

In this regard, in the regions where traditional cultural industries are concentrated, supporting these would be more efficient. This conclusion is relevant for other countries which have similar contexts to Indonesia and which promote traditional businesses as creative industries. It is worth noticing that supporting creative and traditional cultural industries would require different strategies. Creative industries seem to require a support system and preferable climate that facilitate the creation and transfer of new knowledge. In comparison, traditional cultural industries need to be encouraged so as to improve their capacity and competitiveness by going beyond simply following consumption patterns. This is to say, policy strategies can support these industries by introducing new ideas and technologies that can help improve their businesses. However, this might remain a challenge for many cultural contexts in Asia, as to a certain extent traditional values have a sacred meaning that cannot be changed (Kong et al. 2006; O'Connor and Xin 2006). This is quite different from the context of developed countries, where strategies are designed to transform yesterday's cultural industries into tomorrow's creative industries (e.g., Lazzeretti 2007).

NOTES

1. All variables were transformed into log modulus form, computed as $\text{sign}(x) * \log(|x| + 1)$, which is suitable for all types of values: positive, negative and zero (see John and Draper 1980).
2. Considering the relatively smaller concentration of tertiary activities in these regions, excluding them is unlikely to influence the results.
3. Regional employment data are available only from 2007 onwards, but we argue that the condition in 2007 is not very different from 2006.
4. Fashion is supposed to be included as either creative or traditional cultural industries. However, in the Indonesian context it is difficult to classify fashion along the line of either industry. Fashion is expected to develop new designs and styles, but in fact, many fashion firms in Indonesia do not perform such an innovative process. Therefore, fashion is excluded from the analytical model (Fahmi, Koster, and van Dijk 2016).
5. See Inpres 6/2009 on the Development of the Creative Economy.
6. We tried to include the share and the lagged growth separately. However, the results remain the same, so we incorporated both variables simultaneously.
7. We did not run regressions directly for Javanese regions because the number of regions is too small.

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Appendix

TABLE A1. CATEGORISING CREATIVE AND TRADITIONAL CULTURAL INDUSTRIES.

No.	Description	KBLI (2006)	KKKP (1996)
Creative Industries			
1 Advertising and marketing			
	Advertising service; marketing research service	74300; 74130	8293
2 Architecture and design			
	Architecture consultancy service; interior design	74210; 45404	8294; 5440
3 Visual and recorded arts			
	Photography service; film and video reproduction (re-recording) including by government and private; recording media and reproduction	74940; 22302; 92111; 92112; 22130; 22301	9791; 9628
4 Radio and television			
	Radio and television by government and private	92131; 92132	9627
5 Performing arts			
	Drama, music and other entertainment by government and private; Entertainment supporting services; impresario	92141- 92143; 63450	9631; 9632
6 Publishing			
	Publishing Book, textbook, atlas, brochure, pamphlet, music books, newspaper, journal, tabloid, magazine, special publishing, and others; printing; news agency by government and private, reporter (freelance)	22110; 22120; 22140; 22190; 22210; 92201; 92202; 92203	3420; 9633; 9634
7 IT, software and computer services			
	Portal services; other multimedia service; hardware and software consulting; data processing and database service	64323; 64329; 72100; 72200; 72300; 72400	8230
8 Research and development			
	Research and development Science and Engineering, social sciences, humanities, business and management	73120; 73210; 73220; 74140	8240; 8295
Traditional Cultural Industries			
9 Antique market			
	Antique product retails and street vendors; government and private museum	52406; 52594; 92321; 92322	6256; 9629

TABLE A1. *CONTINUED*

No.	Description	KBLI (2006)	KKKP (1996)
10	Batik and crafts		
	Rug/carpet; batik; embroidery; knitted fabrics; products made of leather or artificial leather; webbing of rattan, bamboo and others; woodcut other than furniture; kitchen tools from wood, rattan and bamboo; other wood, rattan and cork that not classified in other categories; other furniture; glass furniture; products and packaging from glass; furniture from porcelain; clay and ceramic products for home use and other than brick and roof tile; marble and granite products for home and decorative; stone products for home and decorative; furniture from wood, metal; various containers from metal; gemstone; jewellery for private use made of noble and non-noble metals; music instruments; toys; hair; packaging and box from paper and carton; knitting confection, socks and others; footwear for daily use, sport, engineering and others	17220; 17124; 17293; 17301; 19129; 20291–20294; 20299; 36109; 26121; 26129; 26124; 26201; 26321; 26324; 26501; 26503; 36101; 36102; 36104; 28994; 36911–36913; 36915; 36921; 36922; 36942; 36993; 21020; 17302–17304; 19201–19203; 19209	3214; 3211; 3233; 3313; 3314; 3322; 3323; 3323; 3621; 3611; 3641; 3649; 3692; 3691; 3321; 3812; 3901; 3902; 3904; 3906; 3412; 3213; 3241; 3242
	Fashion		
11	Confection from textile and its equipment; from leather; from pelt and or accessories	18101; 18102; 18202	3221; 3222

Source: Fahmi, Koster, and van Dijk (2016).

TABLE A2. CORRELATION TABLE.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Share CI	1																	
2 Lagged growth CI	-0.21	1																
3 Share CULT	-0.23	0.33	1															
4 Lagged growth CULT	-0.19	0.42	0.29	1														
5 Share manufacture	-0.45	0.20	0.23	-0.09	1													
6 Share oil & gas	0.10	0.11	0.08	0.09	-0.05	1												
7 Share trade	0.09	-0.09	-0.62	0.01	-0.46	-0.02	1											
8 univ dummy	0.32	-0.05	-0.02	0.02	-0.13	0.06	-0.04	1										
9 pop density	0.39	-0.29	-0.13	-0.16	-0.21	0.01	0.01	0.20	1									
10 prod growth all	-0.01	0.15	0.29	0.07	0.21	0.05	-0.22	-0.06	-0.04	1								
11 prod growth manu	-0.02	-0.03	0.14	0.03	0.02	0.12	-0.14	-0.01	-0.01	0.40	1							
12 prod growth service	0.18	0.01	0.07	0.04	-0.02	0.00	-0.17	0.07	0.09	0.38	0.09	1						
13 Initial prod all	0.39	-0.28	-0.29	-0.16	-0.37	0.08	0.18	0.20	0.24	-0.50	-0.15	-0.15	1					
14 initial prod manu	0.13	-0.10	-0.27	-0.03	-0.30	0.08	0.28	0.08	0.08	-0.51	-0.25	-0.11	0.81	1				
15 initial prod service	0.43	-0.33	-0.21	-0.17	-0.34	0.07	0.14	0.14	0.28	-0.28	0.00	-0.21	0.77	0.36	1			
16 Signal	0.69	-0.32	-0.02	-0.15	-0.33	0.01	-0.23	0.36	0.43	0.04	0.07	0.22	0.25	-0.03	0.28	1		
17 warnet ratio	0.52	-0.43	-0.27	-0.19	-0.38	-0.01	0.05	0.31	0.28	-0.37	-0.10	-0.06	0.44	0.16	0.45	0.52	1	
18 Relvar	0.58	-0.13	-0.19	0.08	-0.45	0.02	0.12	0.25	0.26	0.01	0.00	0.21	0.23	0.09	0.23	0.61	0.34	1