Sectoral dimensions of employment targeting

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Preface

The primary goal of the ILO is to contribute, with member States, to achieve full and productive employment and decent work for all, including women and young people, a goal embedded in the ILO Declaration 2008 on Social Justice for a Fair Globalization, which has now been widely adopted by the international community.


The Employment Policy Department (EMPLOYMENT) is fully engaged in global advocacy and in supporting countries, placing more and better jobs at the centre of economic and social policies and of inclusive growth and development strategies.

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2 See http://www.ilo.org/employment
This paper presents a rationale for analysing employment by taking the sectoral structure of an economy into consideration. It provides an overview of ways of measuring employment intensity and discusses the relationship between employment intensity and labour productivity. It uses the South African experience for empirical illustrations of substantive propositions.

The paper argues that there is generally considerable heterogeneity in the degree of employment intensity within sectors. At the same time, firm size, firm location, product characteristics, and management choices would be amongst the factors affecting employment intensity at firm level. Policymakers should thus avoid relying exclusively on a purely sectoral approach to the exclusion of other factors affecting employment intensity.

The paper makes the important point that the promotion of employment intensity is more appropriate for some sectors than others. In some cases, it may mean a step backwards in terms of competitiveness and growth. In other cases, more employment-intensive techniques can be used without any loss in efficiency or growth potential of the activity. Evidence-based judgements are thus required as to which types of sectors and activities are particularly suited to policy interventions promoting more employment-intensive production.

The paper suggests that a shift in sectoral structure towards more employment-intensive activities will not necessarily happen automatically as there are likely to be a range of domestic and international costs and barriers to structural change. Ensuring the desired change in sectoral structure in the face of such costs and barriers is part of the rationale for an active role for the state, especially through industrial policy.

The paper rightly concludes that employment intensity cannot and should not be the sole criterion in selecting sectors to prioritize and promote. A sector that is not especially employment-intensive might be important in other ways, such as for a country’s balance of payments. These contributions could be important not only for growth but, indirectly, for employment as well. An excessive focus on employment intensity, or the ‘forced’ promotion of employment intensity where it is inappropriate, can actually undermine sustainable employment growth.

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## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>iii</td>
</tr>
<tr>
<td>Foreword</td>
<td>v</td>
</tr>
<tr>
<td>Acknowledgement</td>
<td>vi</td>
</tr>
<tr>
<td>Abbreviations</td>
<td>x</td>
</tr>
<tr>
<td>1. Introduction</td>
<td>1</td>
</tr>
<tr>
<td>2. Review of the literature</td>
<td>2</td>
</tr>
<tr>
<td>3. Measuring employment intensity</td>
<td>5</td>
</tr>
<tr>
<td>4. Employment intensity and labour productivity</td>
<td>8</td>
</tr>
<tr>
<td>5. Decent work intensity</td>
<td>10</td>
</tr>
<tr>
<td>6. Empirical case study of employment intensity: South Africa</td>
<td>12</td>
</tr>
<tr>
<td>7. Conclusion</td>
<td>15</td>
</tr>
<tr>
<td>Bibliography</td>
<td>17</td>
</tr>
</tbody>
</table>
### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IO</td>
<td>Input Output</td>
</tr>
<tr>
<td>SAM</td>
<td>Social Accounting Matrix</td>
</tr>
<tr>
<td>CGE</td>
<td>Computable General Equilibrium</td>
</tr>
<tr>
<td>SIC</td>
<td>Standard Industrial Classification</td>
</tr>
</tbody>
</table>
1. Introduction

The global financial crisis has significantly deepened the existing problem of unemployment internationally. Even with the partial recovery in economic growth, unemployment is expected to worsen further, with the global number of unemployed projected to increase by more than 5 million in 2013 to over 202 million people, and by a further 3 million in 2014 (ILO, 2013a). This on-going and worsening problem of unemployment calls for renewed consideration concerning the measures available to governments to increase employment.

One of the ways in which employment can be generated is through increases in the employment intensity of any given level of output. Even with poor growth, employment can be increased through higher employment intensity. At higher levels of growth, labour absorption will be greater as growth is employment-intensive. Or, to put it another way, a given employment outcome can be achieved through a range of different combinations of growth and employment intensity; the less growth is employment-intensive, the higher the required growth rate, and vice versa.

Economy-wide employment intensity can in turn be increased, either by increasing the share of activities which are relatively employment-intensive in the economy, or by increasing the degree of employment intensity within activities, or by some combination of these. For example, in a stylized two-sector economy where the sectors are agriculture and industry and where agriculture is more employment-intensive than industry, aggregate employment intensity can be increased either by raising the share of agriculture relative to industry, or by raising the degree of employment intensity within one or both of these sectors or, of course, a combination of the two.

There are various ways of categorizing activities in an economy, with differences in employment intensity between those categories. One important way of categorizing activities is by sector. One of the reasons why a sectoral classification is relevant is that the employment intensity varies significantly across sectors. This implies that changes in the sectoral composition of the economy can significantly affect aggregate employment intensity.

From a policy perspective, ‘endogenous’ changes in the sectoral composition of the economy will not necessarily advance public policy objectives. Policy interventions, including promotion of specific sectors, are thus required in order to shift the sectoral composition of the economy, in the interests of maximizing employment or other policy goals.

In order to promote particular sectors on the basis of their employment intensity, information is required on sectoral employment intensity. This information needs to be accurate, detailed, and timely in order to be useful for policy purposes. This paper focuses on conceptual approaches to sectoral employment intensity, and uses South Africa as an empirical case study.

The rest of this paper is structured as follows. Section 2 reviews some key literature related to employment intensity. Section 3 discusses the measurement of employment intensity. The relationship between employment intensity and labour productivity is discussed in Section 4, and ‘decent work intensity’ in Section 5. Section 6 presents an empirical case study of sectoral employment intensities in South Africa, and Section 7 offers some conclusions.

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3 This is shown empirically for the case of South Africa in section 6.
2. Review of the literature

There is a wide-ranging literature relevant to various aspects of employment intensity. This brief review considers five pertinent issues: the relationship between output and employment; empirical evidence on employment elasticities and their determinants; the effects of the sectoral composition of employment on employment growth across countries; the relationship between employment growth and productivity growth; and public works programmes.

Theoretically, the classical way in which employment and output have been linked is through Okun’s Law. Postulated by Arthur Okun in 1962, this ‘law’ refers to an empirical regularity where a one percentage point reduction in the rate of unemployment (above four per cent, taken as full employment) would raise output by approximately three percentage points (Okun, 1962). Okun himself was particularly concerned with the policy implications of formally articulating this relationship, insofar as it would promote policy interventions that reduced unemployment. A number of empirical studies, primarily in advanced economies, have found support for Okun’s Law, even though the magnitudes of the relationship vary somewhat (see for instance, Izyumov and Vahaly (2002), Freeman (2001) and Prachowny (1993). The general relationship has been found to hold true both in expansions and contractions, although magnitudes vary and several studies find an asymmetry in the employment-output relationship between expansions and contractions (see Harris and Silverstone (2001), Virén (2001), Lee (2000) and Palley (1993). The apparent overall robustness of this relationship is interesting in the light of the great heterogeneity between countries and over time in employment elasticities and other factors.

A number of empirical studies compute employment elasticities for specific countries and time periods. Kapsos (2005) calculates global employment elasticities between 1991 and 2003 as varying between 0.3 and 0.38 for different sub-periods. He finds significant differences in global employment elasticities for different demographic groups, with elasticities for women being consistently higher than those for men. Worryingly, employment elasticities for youth are very low and actually negative in one of the sub-periods. Kapsos calculates that global GDP growth of about 10 per cent would be needed to generate enough jobs just to maintain constant youth unemployment. This suggests that the youth employment intensity of growth needs to be increased. According to Kahn (2001), the optimal level for employment elasticities in developing countries is about 0.7, which could fall as a country develops and becomes less labour-abundant.

In terms of determinants of employment elasticities, Döpke (2001) finds that a higher share of the services sector and lower real labour costs raise employment elasticities for European countries. Mourre (2004) finds that lower real labour costs increase employment elasticities in Europe, although the results are not always statistically significant. In a study involving an unbalanced panel of 167 countries over the period 1991-2009, Crivelli et al. find that employment elasticities are raised by structural policies aimed at increasing labour and product market flexibility and reducing government size, and by macroeconomic policies aimed at reducing macroeconomic volatility. Kapsos (2005), in a comprehensive international study, identifies the following significant determinants of employment elasticities with the signs as indicated here: labour supply (positive), the share of employment in services (positive), inflation at very high rates (negative), and the individual tax rate (negative). Interestingly, his results show that employment rigidity (the overall index or its individual components) do not have statistically significant effects on employment elasticities.
More generally, Padalino and Vivarelli (1997), in a comparison of employment elasticities internationally, suggest that there is a structural difference between North America on the one hand and Europe and Japan on the other. They characterize growth in the United States and Canada as ‘expansive’, in the sense of being associated with a broadening of economic activities whereby employment and overall working time increases. Growth in Japan and to a large extent in Europe is characterized as ‘intensive’, as GDP increases are not associated with significant expansions in employment or working time. Padalino and Vivarelli attribute these structural differences to demographic factors and differences in the sectoral composition of the economies, with the North American economies having higher shares of services activities which have higher employment elasticities and lower rates of technological progress.

Concerning sectoral dimensions of employment, although the literature is not extensive, several studies find the sectoral composition of employment to explain much of the cross-country differences in employment growth. Marimon and Zilibotti (1998) conclude that the sectoral composition of employment is an important determinant of differences in employment growth in Europe. Piketty (1998), cited in Garibaldi and Mauro (2002), attributes the difference in employment growth between the US and France largely to differences between the two countries in retail trade employment. Garibaldi and Mauro, however, find that sectoral differences are not particularly important in explaining employment differences amongst OECD countries, except that the relatively high initial share of agriculture in Southern European countries seems to be associated with poorer employment growth than they might otherwise have had.

Another important issue that emerges from the literature is the relative importance of employment growth and productivity growth (see for instance, Islam (2006), Kapsos (2005) and Khan (2001). One argument here is that productivity growth is indicative of the more ‘qualitative’ dimensions of growth in terms of job quality, whereas employment growth is a more limited measure of the quantity of jobs. There are of course other ways in which the growth of quality jobs can be measured, including through wage growth (especially at the lower parts of the wage distribution) and where some measures of decent jobs are available. Another consideration here is that productivity growth also reflects the broader dynamism of economic growth. Its effects on employment are, however, a priori uncertain, as discussed in Section 4. Related to this, Revenga and Bentolila (1995) argue against an exclusive policy focus on either the employment intensity of growth or productivity growth. They caution against achieving either more employment-intensive growth at the expense of productivity, or conversely achieving higher productivity growth (probably along with higher wage growth) for only a shrinking fraction of the population that is employed. These issues are taken up further in the course of this paper.

Khan (2004) discusses the relationships between output growth, employment and poverty, linking these at both the macro and micro levels. He argues that high economic growth can generate employment opportunities at high rates of productivity. The poor can thereby raise their productivity and incomes, either in their existing occupations or by shifting to new occupations. This process can raise productivity in various sectors and occupations, a shift in the composition of employment towards higher-productivity occupations, and increases in incomes and wages. This in turn could support higher household expenditure on children’s education, thereby raising future productivity and supporting higher growth in future. Khan thus posits a pro-poor growth virtuous circle with higher economic growth, higher productive capacity, employment with rising productivity, higher incomes for the poor, higher expenditure on health, education and skills development, increased productive capacity, leading in turn to higher economic growth, and so forth. From a cross-country regression analysis, Khan finds that the employment elasticity of growth significantly affects poverty reduction.
Finally, it can be observed that there is a considerable historical and current corpus of international literature on labour intensity in public works programmes. This literature includes government documents, material produced by international organizations such as the ILO, and academic publications, and spans economics, civil engineering, and other disciplines. The primary concerns of this literature are around choices as to the degree of labour intensity in public works projects and the consequences of such choices for employment creation. Possibly a prime reason for the interest in the issue of labour intensity as pertaining to public works programmes relates to the fact that these are under the direct control of governments, including the choice of technologies to be used in such programmes.
3. Measuring employment intensity

There are four main ways of measuring employment intensity that are relevant here. These are: the labour-capital ratio, the labour-value added ratio, employment multipliers, and employment elasticities. Each of these will be discussed in turn, and their strengths and weaknesses considered.

The labour-capital ratio is the ratio between employment and capital stock. This measure is sometimes referred to in the literature or in policy discourse as labour intensity. It shows the relative factor utilization in an activity and the extent to which the activity is labour-intensive as opposed to capital-intensive. Self-evidently, this measure is particularly relevant where it is relative factor utilization – rather than how much labour is absorbed for any given level of production – that is of interest. The substitution of labour by capital, with its attendant consequences for employment, would be apparent from trends in the labour-capital ratio. The labour-capital ratio would also be germane to a consideration of the employment likely to be directly associated with new capital investment, for example comparing a given monetary value of capital investment in two sectors. It must however be borne in mind that the labour-capital ratio does not indicate the intensity (or conversely the productivity) of either factor in terms of production. For this, the ratio between employment and value added is needed.

The second measure is thus the ratio between employment and value added, which shows the labour intensity of production. This measure indicates how labour-absorbing an activity is for each unit of value added. Note that it is appropriate to use value added rather than total output, since output measures the total output of the sector rather than the actual contribution of that sector in terms of what it produces directly. It is this second measure that is the inverse of labour productivity, as discussed in the next section.

A limitation of both the labour-capital and labour value-added ratios is that they only measure direct employment intensity within a sector. They do not include the extent to which activity in a sector is linked to other sectors of the economy, and the extent to which these other sectors are themselves employment-intensive. For instance, a sector may not be particularly employment-intensive, but it might utilize (as inputs) the output of other sectors that are highly employment-intensive. This would mean that expansion or contraction in that sector could have respectively a strong stimulatory or contractionary impact on employment overall, once these indirect effects are factored in. Indirect employment intensity is included in employment multipliers, the third measure discussed here.

Employment multipliers can thus be thought of as a broader measure of employment intensity that also takes into account indirect employment absorption. They indicate what changes in economy-wide jobs could be associated with a given change in final output of a sector. A sector’s employment multiplier captures not only that sector’s own direct employment intensity but also how it utilizes outputs from other (supplier or upstream) sectors as inputs, how employment-intensive those supplier or upstream sectors are, which of those sectors are themselves linked and how employment-intensive they are, and so on. Employment multipliers thus give the direct as well as the indirect employment intensity of a sector.

Employment multipliers are calculated by combining sectoral direct employment intensities with the Leontief inverse, which is computed from an input-output (IO) table or social accounting matrix (SAM) and shows the strength of a sector’s backward linkages. The methodology is essentially the same whether using an IO table or SAM,
Employment multipliers have the same limitations as the IO tables or SAM from which they are calculated, and should thus be interpreted taking these limitations into account. Technical coefficients of production are assumed to be fixed (although these could always be ‘manually’ altered in the base data should there be valid reasons for doing so). This implies no change in returns to scale and a fixed production structure with no substitution of inputs. It is also assumed that prices do not change. Employment multipliers are thus most accurate for projecting the employment effects of relatively small and short-term changes in demand. Furthermore, the simplest way of computing employment multipliers assumes that there are no supply or capacity constraints, although these could be built into a model. Another consideration in the calculation of employment multipliers is that, unless imported intermediates are separated out, the backward linkages and thus the employment multipliers are not confined to the domestic economy, and may thus be overstated (with this being uneven across sectors depending on how much of a sector’s intermediate inputs are imported). Finally, it should be noted that, unlike for example a computable general equilibrium (CGE) model, IO or SAM analysis does not deal with monetary policy, savings, innovation, and so on. Employment multipliers thus do not account for the effect of changes in demand for the output of a given sector on employment through such channels.

A final measure of employment intensity to be discussed here is employment elasticity. Aggregate employment elasticity refers to the percentage change in employment associated with a percentage change in economic output. Sectoral employment elasticities are the corresponding measure for individual sectors.

Employment elasticity can be thought of as indicating the responsiveness of employment to economic growth, either at aggregate or sectoral levels. It essentially indicates the association or correlation between employment and output and not a causal relationship. Employment elasticities can also be interpreted in terms of the extent to which economic growth can be ‘attributed’ (in a non-causal sense) to increased productivity and to higher employment (increased utilization of labour). For example, an employment elasticity of 0.6 for a given time period indicates that 60% of economic growth during that period can be ‘accounted for’ by increased utilization of labour and the remaining 40% by increases in productivity.

Employment elasticities can be calculated not only for different sectors but also for different demographic groups such as youth or women, as well as for different geographical areas. Where employment elasticities are calculated for demographic groups, it is total GDP that is used (instead of the GDP produced by that group, given the lack of a breakdown of the data for that group). As such, demographic employment elasticities indicate how employment of that group is associated with overall economic growth, not specifically with growth of the output produced by that group, as would be the case with sectoral or geographic employment elasticities.

The simplest form of employment elasticity is the arc elasticity of employment, which is simply the ratio between the percentage change in employment and percentage change in output for a certain period of time. Arc elasticity is essentially descriptive in nature. Furthermore, it tends to be relatively unstable depending on which start and end dates are chosen (Islam and Nazara, 2000). Point elasticities are a more sophisticated form of employment elasticities. A key advantage of point over arc elasticity is that the regression method of computing the former allows for other relevant variables to be held constant.
Islam and Nazara draw attention to several limitations of employment elasticities. Firstly, while the relationship between output and employment is actually a two-way one, employment elasticity focuses on the demand side of the relationship and ignores the supply side (in which higher levels of employment generate higher output). Secondly, a given employment elasticity is valid for a given state of technology, knowledge, policy, and so on; changes in these factors will affect the employment elasticity in an economy, which is thus not exogenous. A third complexity, which may be country-specific, is that employment elasticities may be asymmetrical between economic expansions and contractions. Fourthly, economy-wide employment elasticities cannot distinguish between the ways in which changes in total and sectoral output affect employment, including between direct and indirect effects. A related limitation, which can be added here, is that even sectoral employment elasticities do not include the indirect effects of changes in output in a sector on employment in other sectors.

Kapsos (2005) notes three further shortcomings of employment elasticities. Firstly, only information on historical employment and output growth is taken into account, leading to a danger of omitted variable bias. He suggests that employment elasticities should be interpreted as showing correlations rather than causalities.

Notwithstanding the limitations of employment elasticities, Islam and Nazara argue that at least some of these can be overcome through careful and appropriate empirical estimation and interpretation.

In conclusion, it can be observed that the choice of measure for employment intensity must ultimately be fit-for-purpose. As discussed above, each has strengths and weaknesses. Of these, the advantage of employment multipliers in factoring in not only direct but also indirect employment intensity is important. But the choice of measure in a specific context will be guided, inter alia, by data availability, computational capacity, and the purpose for which the measure of employment intensity is needed.
4. Employment intensity and labour productivity

There is a triangular relationship between employment, economic growth, and either employment intensity or labour productivity. Mathematically, these are related through an identity (since labour productivity is the ratio between output and employment, or employment intensity is the ratio between employment and output). For reasonably small changes, the change in employment is the difference between changes in output and in productivity, or equivalently, the sum of changes in output and in employment intensity. Thus, for any positive growth in employment, output growth needs to exceed productivity growth, or equivalently, the sum of output growth and employment intensity must be positive (i.e. where the economy or sector becomes less employment-intensive this change must be outweighed by output growth).

It would generally be deemed desirable to raise labour productivity (as well as other forms of productivity), whether at the level of an individual firm or the overall economy. Mathematically, labour productivity is simply the inverse of labour intensity (where labour intensity is measured simply as the ratio of employment to output or value added). The most employment-intensive sectors, according to this measure also, by definition, have the lowest levels of labour productivity. Employment intensity is thus not necessarily a desirable characteristic of an activity or policy objective when a broader approach is taken.

If nothing else happens (that is, no growth in output), increased labour productivity means lower employment. In order for a rise in labour productivity to generate increased employment, output has to increase more than proportionately. Through growth, overall employment gains can thus exceed any direct labour displacement arising from increases in labour productivity.

However, productivity increases do not guarantee growth. With the multiple complex domestic and international determinants of a country’s growth rate, an increase in labour productivity could be accompanied by poor economic growth, lower than the growth in productivity.

A further issue is that, even with productivity-driven growth increases and even where these increases outstrip productivity growth, there may be a time lag, and hence a short to medium-term increase in unemployment. While not necessarily a fundamental problem insofar as higher employment is expected to follow in due course, palliative measures may be required in the interim. In addition, the people who lose their jobs may very well not be the same as those who gain new high-productivity jobs. This would have distributional effects as well as negatively affecting the livelihoods and lives of those losing their jobs. At the least, social measures would be required in this regard.

Notwithstanding all these complexities of productivity growth in relation to the need to create employment, it must be emphasized that countries simply cannot avoid the imperative of productivity growth. Without productivity growth, an economy will be unable to sustain economic growth. While there could be short to medium-term employment growth without productivity growth (or even with a decline in productivity), the economy is likely to stagnate over time and lose its share in global markets, with negative effects not only on growth but also on employment.

Apart from the crucial importance of increasing productivity from a growth perspective, it is also important for increasing workers’ incomes (even though productivity increases do not necessarily translate into wage increases) and hence for raising living standards. High employment growth combined with poor output growth
implies weak productivity growth. This may also be associated with deterioration in job quality and an increase in the proportion of the ‘working poor’.

The conundrum of needing to increase both labour productivity and the absorption of labour is especially pronounced for developing economies with high unemployment. The availability of labour relative to capital in developing economies suggests the use of employment-intensive technologies and techniques, especially in the context of high rates of open unemployment. However, such technologies and techniques are often not optimal for modernization and catch-up.

There are no easy answers to this conundrum. At the sectoral level, sectors need to be considered not only in terms of their direct employment intensity or labour productivity, but also in terms of their roles in the wider economy, both in terms of broader employment multipliers and their overall role in the growth process. The country-specific context also needs to be considered, taking into account the most pressing challenges facing a particular economy.
While the primary focus here is on overall employment intensity, it is not just the number of jobs that needs to concern policymakers but also the quality of those jobs. Job quality can be thought of in terms of decent work. This is important, *inter alia*, for the extent to which growth and employment creation can create sustainable livelihoods and lift people out of poverty.

In addition to sectoral heterogeneity in terms of employment intensity, there is variation in job quality and in the prevalence of decent work. This could be in areas such as wage and benefits levels, job security, the level of unionization, protection of labour rights, and so forth. Some of these differences are at firm level, between and even within firms. But there are also likely to be sectoral and subsectoral patterns in job quality and the prevalence of decent work. For instance, collective bargaining agreements are often sectorally based, meaning that some minimum wages and working conditions apply across those sectors or subsectors. Governments also prescribe minimum wages and conditions of employment for certain sectors. As a consequence, there are typically some commonalities in job quality within sectors, notwithstanding the considerable heterogeneity.

An implication of this is that the sectoral dimensions of employment need to be analysed not only in terms of a narrow quantitative measure of employment intensity, but also taking job quality into account. A policy implication flowing from this is that the prioritization of sectors to be supported can, to some extent, also take into account sectoral patterns in terms of job quality.

Taking sectoral job quality into account requires information on sectoral job quality. Ideally, this should be in the form of data on the number of jobs in a sector that can be classified as decent jobs. Such information, however, is often unavailable, especially in developing countries. Proxy measures are thus required. Data on sectoral wages are one source of information, although average sectoral wages can be skewed upwards by very high wages at the top. Where available, wage measures that give some indication of wage levels at the lower part of the sectoral wage distribution are thus more relevant than average wages. Information on the proportion of jobs in a sector that have associated benefits and the proportion of jobs in the formal sector may be a possible (albeit imperfect) proxy for decent work.

We can thus propose the concept of ‘decent work intensity’ or ‘decent employment intensity’. This can be calculated at the sectoral level with the sort of information discussed immediately above. We could construct decent work intensity measures analogous to any of the measures of employment intensity set out in Section 3. For instance, a ‘decent work employment multiplier’ would measure the number of decent jobs directly and indirectly associated with an expansion in final demand in a sector. Sector A may have a higher overall employment multiplier than sector B, but a lower decent work employment multiplier, and this would need to be factored into policy.

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4 The ILO defines decent work as the opportunities for work that are productive and deliver a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men (ILO, 2013b).
A ‘weaker’ version of decent employment intensity’ could be ‘productive employment intensity’. While a less expansive concept than decent work, productive employment may be easier to quantify, and captures to some extent the important notion of job quality.

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5 The ILO defines productive employment as ‘employment yielding sufficient returns to labour to permit the worker and her/his dependents a level of consumption above the poverty line’ (ILO, 2012, p3).
6. **Empirical case study of employment intensity: South Africa**

This section offers an empirical analysis of sectoral employment intensity in the case of South Africa. South Africa has an extremely high rate of unemployment, amongst the highest in the world. Policies aimed at employment creation are thus particularly important. Analysing sectoral patterns in employment intensity, as is done here, is important for developing effective employment policies.

Employment multipliers across the various sectors of the South African economy are presented here, at the highest level of disaggregation for which data is available. These figures project how many additional jobs would be required economy-wide in order to meet a one million Rand increase in final demand for a given sector.\(^6\) The analysis uses data in 2009 current prices.

Figure 1 shows total employment multipliers for each sector. Figure 2 shows employment multipliers when imported intermediates are excluded. The latter gives a better indication of the actual domestic employment intensity across sectors.

The heterogeneity in employment intensity across sectors comes through clearly from the two figures. The ‘other producers’ subsector has a total employment intensity that is more than seventeen times as high as that of coal mining, the least employment-intensive sector (according to that measure). Using the intermediate import adjusted measure, ‘other producers’ is twenty times as employment-intensive as the next-most employment-intensive sector, coke and refined petroleum. These distinct sectoral patterns and very large differences between sectors evident in the South African case highlight the importance of a sectoral analysis of employment intensity.

The ‘other producers’ subsector is by far the most employment-intensive, according to both measures, and appears as a clear outlier. A difficulty in understanding this subsector is that, apart from a few minor specific activities (laundries and dry-cleaning, hairdressing and other beauty treatments and funeral services), it essentially includes employment in services not elsewhere classified, with no further detailed information available on what sort of activities account for most of the employment in this subsector.

The next most employment-intensive subsectors come from a mix of manufacturing, agriculture and services sectors: clothing, catering and accommodation, agriculture, textiles, wholesale and retail trade, furniture, and wood and wood products. The least employment-intensive include the heavy manufacturing subsectors; electricity, gas and water utilities; and coal mining. The least employment-intensive services subsector is finance and insurance.

This brief empirical case study of employment intensity in South Africa is illustrative of the type of information needed for the sectoral analysis of employment. The specific results discussed here naturally cannot be generally extrapolated to other countries, although some broad commonalities in sectoral patterns might be expected. Accurate and up-to-date country-specific data on employment intensity, using a measure appropriate for the intended analytical and policy objective, is essential for evaluating which sectors to prioritize and support.

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\(^6\) Although the analysis is actually average and not marginal (see the discussion of the limitations of employment multipliers in Section 3).
Figure 1: Employment multipliers by subsector, 2009 (total)

Note: ‘Other producers’ includes a few minor specific activities (laundries and dry-cleaning, hairdressing and other beauty treatments, funeral services) other services not elsewhere classified.

Source: Author’s calculations based on SASID data (Quartec).
Figure 2: Employment multipliers by subsector, 2009 (intermediate import adjusted)

Note: ‘Other producers’ includes a few minor specific activities (laundries and dry-cleaning, hairdressing and other beauty treatments, funeral services) other services not elsewhere classified.

Source: Author’s calculations based on SASID data (Quan tec).
7. Conclusion

This paper has presented a rationale for analysing employment along sectoral lines and for taking sectoral structure into consideration in designing policies for employment promotion; it has reviewed the relevant literature on employment intensity, provided an overview of ways of measuring employment intensity, discussed the relationship between employment intensity and labour productivity, proposed the concept of ‘decent work intensity’, and analysed empirically sectoral employment intensity in South Africa as a case study.

Some overall remarks and consideration of policy implications draw this paper to a close. Firstly, the rationale for analysing the sectoral dimensions of employment, as well as for developing policy interventions on that basis, rests on there being sectoral patterns in employment intensity. However, there is generally also considerable heterogeneity in the degree of employment intensity within sectors, and even within subsectors. Subsectors generally include a wide range of activities. Furthermore, even within an activity there are significant differences in production techniques, with some being more employment-intensive than others. Firm size, firm location, product characteristics, and management choices would be amongst the factors affecting employment intensity at firm level. These could also be thought of as other dimensions along which employment intensity varies. This sort of detail does not come out of the meso analysis at sectoral or subsectoral level. Policymakers should thus avoid relying exclusively on a purely sectoral approach, to the exclusion of other factors affecting employment intensity.

Secondly, and related to the above, it is worth pointing out that the higher the level of disaggregation, the greater the degree of homogeneity within sectors or subsectors. This generally pertains to the degree of homogeneity in employment intensity as well as other characteristics of activities. For example, if one-digit SIC codes are used to classify activities, then there will be far greater variation in the level of employment intensity within sectors than with a four-digit disaggregation. For both analytical and policy purposes, a higher level of disaggregation is preferable in that it allows for a more precise identification and promotion of activities with especially high employment intensity. Computation of disaggregated sectoral measures of employment intensity depends primarily on the level of disaggregation at which data is available.

Thirdly, the promotion of employment intensity is more appropriate for some sectors than others. In some cases, it may mean a step backwards in terms of competitiveness and growth, and may be unwise in terms of growing employment in a sustainable way. In other cases, more employment-intensive techniques can be used without any loss in efficiency or growth potential of the activity. Large-scale infrastructure construction could be a good example of the latter type of activity. Evidence-based judgements are thus required as to which types of sectors and activities are particularly suited to policy interventions promoting more employment-intensive production, rather than a generic approach.

Fourthly, a shift in sectoral structure towards more employment-intensive activities will not necessarily happen automatically or endogenously. As with other types of shifts in sectoral structure, there are likely to be a range of domestic and international costs and barriers to structural change. These costs and barriers may include access to technology and the costs thereof, patterns of ownership and control, institutional and political economy factors, and so on. Ensuring the desired change in sectoral structure, in the face of such costs and barriers, is part of the rationale for an interventionist role for the state, especially through industrial policy.
Fifthly, it must be emphasized that employment intensity cannot and should not be the sole criterion in selecting sectors to prioritize and promote. It may not even be the primary criterion. While employment creation should be a central public policy objective, especially for countries with especially high unemployment, it cannot be the only objective for governments. A sector that is not especially employment-intensive might be important in other ways, such as for a country’s balance of payments. These contributions could be important not only for growth but, indirectly, for employment as well. The balancing of employment with other policy objectives depends in part on the nature of the development challenges facing a particular country at a particular time. This needs to inform the extent to which employment creation is prioritized vis-à-vis other goals. Furthermore, even in terms of the goal of employment creation, the promotion of employment intensity cannot be the only way of achieving this. An excessive focus on employment intensity, or the ‘forced’ promotion of employment intensity where it is inappropriate, can actually undermine sustainable employment growth.

Finally, and related to the above point, it needs to be borne in mind that, ultimately, it is employment and not employment intensity that matters. It is also worth noting that increasing employment, that is creating more jobs, is not the same as reducing unemployment. Employment intensity is important insofar as it contributes to stronger net employment creation on a sustainable basis, not as an end in itself.
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