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**Macroeconomic Structure and the  
(Non-)Vulnerable Employment  
Intensity of Growth  
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# Macroeconomic Structure and the (Non-)Vulnerable Employment Intensity of Growth

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## **Abstract**

From a macroeconomic perspective, this paper asks whether or not output growth has been working in tandem with decent work targets over the past few decades. Though country experiences vary, growth has generally been much less of a driver toward decent work targets after the 2009 global downturn than previously. Using vulnerable employment data spanning 48 countries (1990-2010), this paper then identifies the structural contexts that were positively associated with relative flows of labor in to non-vulnerable employment. Findings suggest institutional and human capital drivers of growth were relatively more aligned with decent work progress in Latin America. Conversely, physical capital investments were a stronger driver in non-Latin American economies. The share of services is also positively associated with growth that favors decent work for the full sample.

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# 1 Introduction

How the employment benefits of growth are distributed depends on the source of output growth, the nature of structural and demographic transformations, and other institutional and labor market features of economies. This has led to uneven patterns of human development within and across countries. For example, McMillan & Rodrik (2011) and McMillan et al. (2013) show that for many Latin American and African countries, structural employment changes have actually been growth reducing, while it has been growth enhancing in much of Asia. This is due to the fact that, when faced with global competition, labor and other factors of production are moving to lower productivity sectors, specifically informal employment. As well, Cook (2006) illustrates the various structural transformations, which have accompanied growth in Asia and their implications for poverty reduction policies.

The growth-employment nexus is further complicated by the fact that not all employment is created equally. Over the past several decades there has been growing international recognition of the gap in decent work, and the formal inclusion of “decent work for all” within Millennium Development Goal (MDG) number one in 2008 underscores the emerging consensus.<sup>1</sup> The issue of decent work provisioning is especially meaningful for a post-2015 round of development goals, in which dialogue is set within the context of what the International Labour Organization (ILO) refers to as a global employment crisis (ILO, 2012a).

This paper seeks a better understanding of which macroeconomic circumstances lead to output growth being biased in favor of decent work targets in a globalized setting. In order to operationalize that aim, the ILO’s definition of vulnerable employment is used. Vulnerable employment is undoubtedly one of many dimensions of decent work and is defined as the subset of the self-employed that are own account (no employees) or contributing family workers. Though it is one small and imperfect aspect of what may be more broadly termed quality employment, it is strongly correlated with other aspects of precarious work, is often associated with a lack of access to employment-related safety nets, collective action, and the like, and the data is relatively comparable internationally.<sup>2</sup>

Output elasticities of non-vulnerable and vulnerable employment are estimated for a panel of 48 countries from 1990-2010. Intuitively, the two elasticities can be thought of as relative labor absorption rates of the non-vulnerable economy vis-a-vis the vulnerable economy in response to a 1% rate of GDP growth. After illustrating the trends in employment elasticities across regions, the analysis focuses on the gap between them in order to identify which macroeconomic and structural features are associated with relative labor absorption rates of the two types of employment. This is done using a feasible GLS estimator for a panel of 48 economies with a particular emphasis on Latin America and Caribbean (LAC) economies.

The study finds that for many countries around the world, and Latin America in particular, a 1% rate of GDP growth has been much less of a driver toward decent work goals after 2007 than previously. The tenuous nature of vulnerable employment data notwithstanding, the findings suggest that fundamental drivers of growth (human capital formation and quality of the rule of law) were

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<sup>1</sup>See Vandemoortele (2009) for a related discussion of whether or not the MDGs should be considered an appropriate yard stick.

<sup>2</sup>The next section examines the pros and cons of using vulnerable employment in more detail.

more aligned with decent work progress in Latin America than elsewhere. Conversely, investments in physical capital had been a stronger driver toward decent work targets in non-Latin American economies. This evidence is in line with prior studies and suggests that even though within sector productivity gains may have contributed positively to overall growth, those gains were associated with a vulnerablization of employment for LAC economies. The share of an economy’s employment devoted to services is also observed to be positively associated with growth that is biased in favor of decent work across the full sample. Lastly, the study does not find evidence of a significant impact of natural resource dependence, size of government, or international trade dependence on either elasticity measure. Although the measure of vulnerable employment does not completely capture all aspects of precarious and decent work, this study is an important contribution to the growing body of empirical evidence regarding decent work progress and policy support for international targets.

The rest of the paper is as follows. Section two describes the institutionalization of decent work targets and assesses the virtues and limitations of focusing on vulnerable employment, while section three provides background on the relationship between macroeconomic structure, growth, and vulnerable employment. Sections four and five make up the empirical core of the paper by describing employment elasticity trends and then identifying macroeconomic and institutional settings in which growth was working in tandem with decent work efforts for 48 economies. Section six concludes the study.

## 2 Vulnerable Employment and the Decent Work Agenda

Before assessing which macroeconomic and institutional settings have led output growth to work in tandem with decent work efforts, some conceptual and practical concerns must be addressed regarding the measurement of decent work, vulnerability, informality, precariousness, employment quality, and the like. Each of the terms have at times been used loosely as well as consistently within the respective literature niches.<sup>3</sup> At the risk of downplaying any one term, most are intended to capture multiple dimensions of employment characteristics and have significant overlap. For example, Vosko (2006, p3) suggests that precarious employment “is shaped by employment status (i.e. self-employment or wage work), form of employment (i.e. temporary or permanent, part-time or full-time), and dimensions of labour market insecurity as well as social context (such as occupation, industry, and geography), and social location (the interaction between social relations, such as gender and ‘race,’ and political and economic conditions)”. From this perspective, vulnerable employment is explicitly represented by employment status, but overlaps with of many of the other elements that shape precarious employment. Although implicit, vulnerable employment does convey a great deal about the social location of employment. For example and using 2010 data for Colombia, the men’s-to-women’s share of total employment is 59% to 41%, but women’s share of vulnerable employment is 1 percentage point higher than men’s.<sup>4</sup> This relative over-representation of women in vulnerable employment follows well documented patterns within gendered studies of informal

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<sup>3</sup>See Burchell et al. (2012) for a review of the term *quality of employment* in the academic literature or Khamis (2012) for an overview of informality perspectives.

<sup>4</sup>Author’s calculations based on ILO (2012b).

employment (Chant & Pedwell, 2008; Barrientos & Kritzinger, 2004). As well, gender pay gaps tend to be larger in vulnerable and informal employment (ibid).

The term decent work has taken on a more specific characterization since the institutionalization of the the ILOs Decent Work Agenda in 1999 which culminated with the inclusion of a “decent work for all” target within the 2015 Millennium Development Goal number one. Originally an index of 7 indicators of decent work, it was expanded to include 4 more dimensions in 2002. In 2003, the *International Labor Review* published a special issue with several wide-ranging suggestions and revisions (ILO, 2003). In 2008, the ILO launched what might be termed the Decent Work Agenda 2.0, which was an expanded set of 19 core indicators, 25 additional indicators (including vulnerable employment) and 8 socioeconomic variables.

Important caveats must accompany the use and interpretation of vulnerable employment. Practically speaking, a measure of own account workers cannot fully distinguish between voluntary entrepreneurship and that of work that is less desirable than some alternative. For example, informal salaried work may be measured as non-vulnerable work, but may in fact lack the protections making that type of work vulnerable. In this sense, the measure of vulnerable employment does not map exactly into informal employment, nor does it capture all forms of employment that are truly vulnerable. Said another way, vulnerable employment may take place within formal or informal sector enterprises (ILO, 2002). It is also tempting on a conceptual level to consider vulnerable employment less desirable than non-vulnerable employment as it is defined. However, for many workers, being in this type of work may well be voluntary (Bosch & Maloney, 2010). Possible factors influencing this choice range from intra-household labor decisions to attitudes toward government social programs. Reardon et al. (2001), Ruben & Van den Berg (2001), Ackah (2013), and others note that in rural areas self-employment of this type reduces food insecurity. Thus, the interpretation of vulnerable employment is context specific and open to interpretation.

Though not perfect, the measure of vulnerable employment is used for the empirical exercise. In addition to the the reasons listed above, it provides a more transparent measure than a multi-dimensional index, is relatively internationally comparable, and is objectively measured at a broad level of the labor market. Additionally, the share of vulnerable employment in total employment is significant with many countries reporting 40% or more (ILO, 2012b). How the structural features of an economy influence the flow of labor into vulnerable and non-vulnerable employment is discussed next.

### **3 Macroeconomic Structure, Growth, and Vulnerable Employment**

In the face of global competition, exporting industries may be expected to become more efficient or risk shutting down. The labor reallocation of this increased competition will likely be influenced by the macroeconomic and institutional structure of the economy. Thus, a decent work assessment through the lens of the growth-employment nexus must consider these contextual features. In order to better ground the empirical analysis of sections 4 and 5, lessons from the rich intellectual history

of how structure and institutions influence growth and employment are drawn from the development literature. Broad patterns from the informalization literatures are briefly identified before narrowing in on the structural change and growth discussion of McMillan & Rodrik (2011).

Within the informalization and development literature, Carr & Chen (2002) suggest there are three well-known schools of thought. First is the dualist perspective suggesting that the informal sector is a separate, marginal sector not directly linked to the formal economy. This perspective generally assumes that the formal sector alone cannot supply enough jobs for a growing labor force; informal jobs therefore arise to provide transitory employment for workers unable to find opportunities elsewhere (Misati, 2010). Second is the legalist perspective which presents informality as the consequences of government failure and emphasizes the role of regulation (see for example De Soto (1990)). As well, Kucera & Roncolato (2008) provide a detailed overview of the labor regulations argument and voluntary informal employment. In addition to those two perspectives is the structuralist perspective, growing out of the work of Lewis (1954). This well known tradition sees the two sectors as complementary. Lastly, many contemporary studies emphasize the role of institutions (Singh et al., 2012; Rei & Bhattacharya, 2008), networks (Zenou, 2011; Portes & Hoffman, 2003), and ethnic heterogeneity (Krakowski, 2005) in determining informality.

Lessons from these long-standing debates on the role that informality plays in the development process illustrate the contextual nature of the growth - employment nexus. Such things as inter-sectoral productivity gaps, labor market rigidities, tax policy, regulations, institutions, ethnic fractionalization, and global positioning all potentially influence the dynamisms associated with structural change. The net effect of these processes is elegantly captured by Pagés (2010) and McMillan & Rodrik (2011). These studies estimate the role of structural employment changes on overall productivity growth by decomposing aggregate productivity growth into two component parts: within-sector and structural change contributions. Within sector increases in productivity might stem from the industrialization process and/or capital improvements in specific sectors. The structural change component is the contribution of labor moving across sectors with differing productivities. For example, labor flowing from low to high productivity sectors would, all else equal, increase aggregate productivity. As is commonly emphasized, this type of structural change can be a major driver of development. The central finding of these studies is that for most Latin American and African countries, structural change's contribution to aggregate productivity growth has been zero or even negative between 1990 - 2005. In other words, structural change has been a drag on aggregate productivity growth (McMillan & Rodrik, 2011, p.1). This finding is contrary to the experience of the Asia region in which structural change has been growth-enhancing. In the process of changing trade patterns and greater integration into the global economy, the patterns of structural change have had uneven results. The following summarizes how the inter-sectoral flows of labor led to this,

“A key promise of globalization was that access to global markets and increased competition would drive an economy's resources toward more productive uses and would enhance allocative efficiency. It is certainly true that firms that are exposed to foreign competition have had no choice but to either become more productive or shut down. As trade barriers have come down, industries have rationalized, upgraded, and become

more efficient. However, an economy’s overall productivity depends not only on what is happening within industries but also on the reallocation of resources across sectors. This is where globalization has produced a highly uneven result.” - McMillan & Rodrik (2011, p.27)

With regard to Latin America’s policy experience over the decade of the 1990s and early 2000s, Ocampo (2004) argues that the structural reforms during the period did not adequately reallocate labor and other factors of production to dynamic sectors, thus resulting in “growth and equity frustrations” for the region. It is clear that the factors influencing the flows of labor during the process of structural reform at least partly determine whether the outcome is growth-enhancing or growth-reducing. In addition to the above results of regional unevenness, the McMillan & Rodrik study also finds that an economy’s dependence on mining exports, labor market rigidities, and currency competitiveness influence this growth outcome. But what more can be said about the evolution of employment status? In particular, does the observed reallocation of labor to lower productivity sectors in Latin America and Africa necessarily imply a vulnerablization of employment? This paper pushes that analysis further by assessing the extent to which labor has been absorbed into vulnerable or non-vulnerable employment over the past two decades. To that end, how the respective output elasticities and relative labor absorption rates are estimated is discussed next.

### *Measuring Relative Labor Absorption Rates*

The output elasticity of employment (henceforth referred to as the employment intensity or employment elasticity) provides one way of analyzing the growth-employment nexus. It captures the extent to which an increase in production increases the quantity of employment. For example, an economy experiencing 4% growth and a growth elasticity of employment equal to .5 would be experiencing a 2% increase in employment over the period. Here, employment elasticities are calculated for both vulnerable and non-vulnerable employment. Non-vulnerable employment is defined simply as total employment less vulnerable employment. This provides two comparable measurements of the responsiveness of non-vulnerable and vulnerable employment to a given unit of output growth.

Following closely the strategy outlined by Kapsos (2005), the two employment elasticities are estimated as follows,

$$\ln E_{it} = \alpha + \beta_1 \ln Y_{it} + \sum_{i=1}^I \beta_{2i} \ln Y_{it} \times D_i + \sum_{i=1}^I \beta_{3i} D_i + \mu_{it} \quad (1)$$

where  $\ln E$  is the log of employment,  $\ln Y$  is the log of real output for country  $i$  in year  $t$ , and  $D$  is a country dummy variable, and  $u$  is the random error term. This gives the following expression for the output elasticity of employment,

$$\frac{\partial E_{it}}{\partial Y_{it}} \left( \frac{Y_{it}}{E_{it}} \right) = \beta_1 + \sum_{i=1}^I \beta_{2i} \times D_i \quad (2)$$

Using annual data, equation (1) is estimated separately for each type of employment (vulnerable

and non-vulnerable) and for each multi-year time period (1990-1999, 2000-2007, and 2007-2010).<sup>5</sup> The use of a multi-year time period is necessary for two reasons. First, this smooths out annual fluctuations in elasticity estimates. As Kapsos (2005:6) points out, countries with low GDP growth may exhibit large swings in elasticities arising from small changes in the underlying variables. It is thus important to consider the relative size of GDP growth along with elasticity to get a sense of how much employment actually changed. Second, it allows for a more appropriate amount of degrees of freedom. In a sample with  $I$  slope dummies plus  $I$  intercept dummies, observing the countries over several years affords more observations relative to the number of estimated parameters. This method generates a vulnerable employment elasticity ( $Velast$ ) and a non-vulnerable employment elasticity ( $NVelast$ ) for each country and each of the three multi-year periods. Although a dynamic specification that uses time series data and lagged employment values may circumvent the contemporaneous nature of equation (1), it has been argued that such a specification is better suited to capture short run elasticities. Thus, the specifications above imply our elasticity estimates describe the longer run relationship between output and employment growth. For more detail regarding short- and long-run employment intensity estimates see Behar (2012).

In general, one would expect  $NVelast$  to be positive and  $Velast$  to be negative during periods of positive output growth. Respectively, these signs describe increases in non-vulnerable employment and decreases in vulnerable employment in response to a given (positive) level of output growth. For our data this is observed to be true more often than not, but is not always the case. Exploring growth and informal employment, for example, Heintz & Pollin (2003) show that the relationship is not always countercyclical. As will be illustrated in the next section, what is most common is that  $NVelast$  is larger than  $Velast$ . This suggests that a 1% increase in output leads to more non-vulnerable employment changes relative to vulnerable employment changes. If  $Velast$  is negative, then the interpretation is even stronger: a 1% increase in output increases non-vulnerable employment at a faster rate than vulnerable employment is being reduced. This speaks to the institutional embeddedness of vulnerable employment.

To the extent that the elasticities capture labor absorption rates into non-vulnerable and vulnerable employment, the gap between the two elasticities can be thought of as the relative absorption rate ( $RAR$ ) of labor into non-vulnerable employment vis-a-vis vulnerable employment.<sup>6</sup> The larger the gap between the two, the more growth is associated with provisioning of non-vulnerable employment relative to that of vulnerable employment. An investigation of the trends in elasticity gaps over time signals whether or not growth is rowing with or against the global tides along the way to decent work targets. Keeping in mind the conceptual and measurement limits of vulnerable employment data, the larger the gap, the stronger the signal that growth is working in tandem with decent work efforts.

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<sup>5</sup>Though it would be preferable to have output,  $Y$ , disaggregated by the vulnerable and non-vulnerable economies' contribution to output, this level of data is not available. Because output and employment data are from two different groups, nothing concrete can be said about the sub-group productivity responses to a given unit of growth. For more on the relationship between employment and productivity intensities, as well as a general discussion on growth elasticities of employment, see Kapsos (2005) and Anderson & Braunstein (2013).

<sup>6</sup>The term *relative absorption rate* is used rather loosely, but it has some intuitive appeal. Perhaps a more precise description would be *the output elasticity of the ratio of non-vulnerable to vulnerable employment*.

## 4 Trends in Non-Vulnerable and Vulnerable Employment Elasticities: 1990-2010

There are 48 countries with sufficient observations of vulnerable employment and relevant control variables spanning the years 1990-2010: 16 Latin American and Caribbean (LAC), 8 Asian, 14 Western European and Western offshoot countries, 8 Central and Eastern European, and 2 African economies. Appendix 1 lists these countries, their vulnerable employment shares, elasticity estimates ( $RAR$ ,  $NVelast$ ,  $Velast$ ), and real per capita GDP growth rates by period.

One unique challenge a cross-country study introduces is that diverse countries are not likely to have the same histories that signal clear boundaries for selection of multi-year periods. Thus breaking the data into multi-year periods that coincides with all country or regional experiences may be difficult. In spite of that, the 20-year span is broken into three periods capturing large global changes: 1990-1999, 2000-2007, and 2007-2010. The decades of the 1990s and 2000s mark a convenient break describing a shift away from Neoliberal reforms in many parts of the world and Latin America in particular. Additionally, the first decade of the 2000s was itself punctuated by the global downturn that began in 2007.

Both vulnerable and total employment data are from the ILO's Key Indicators of the Labor Market (ILO, 2012b). Output data are from the World Bank's Development Indicators 2012 database (World Bank 2012). All data are in constant 2000 USD unless otherwise noted. If data are missing in a single year, the values were imputed as a simple average of the year before and after.

### *Trends and Stylized Facts*

Vulnerable employment has been a consistent part of economic life for many people over the twenty year period. As is evident from appendix 1, individual country experiences vary quite a bit. For the 48 countries, vulnerable employment averages around 25% of total employment across all three periods with a slight improvement in the most recent period. Countries in the sample range from a high of 64% (Indonesia) to a low of 5% (Luxembourg). Although the decrease in the post-2007 vulnerable employment share is a positive sign, this decrease in vulnerable employment's share should be regarded with some caution, as this improvement may be explained in part by three observations. First, rising labor force participation rates in the non-vulnerable economies may or may not be drawing labor out of vulnerable employment. Indeed total labor force participation rates rose steadily from around 60% to 65% for the median country during the entire 20-year period (author's calculations). New entrants into the labor force that find non-vulnerable employment will increase total employment and reduce the observed share of vulnerable employment without any actual reduction in the level of vulnerable employment. Second, and by similar logic, employment to population ratios rising faster than vulnerable employment rates would also lead to lower vulnerable employment shares. Third, all 48 countries report data for the post-2007 period, but not all had vulnerable employment data for 2010. Thus, the period average is disproportionately weighted toward the early years of the global downturn. These all suggest that that the third period average vulnerable employment shares and estimated  $Velast$  are lower bound estimates.

Figure 1 illustrates the average values of *Velast* and *NVelast* across the three periods for the 16 LAC and 7 South-East and South Asian countries. We choose to single out Latin America and Asia based on the findings of McMillan & Rodrik (2011) described above, which found that structural employment changes had been growth reducing for LAC and African countries as compared to more successful structural changes in Asia. The averages are weighted by each country's relative share of vulnerable employment in the region, thus giving more weight to economies with larger absolute sizes of vulnerable employment. The negative *Velast* in four of the six periods suggests that an increase in output growth is associated with a decrease in vulnerable employment. The more negative the estimate, the greater the decrease from a given rate of positive output growth. Similarly, the positive *NVelast* describe the extent to which non-vulnerable employment rises with output. The gap between *NVelast* and *Velast* is the relative absorption rates of labor into non-vulnerable and vulnerable employment, *RAR*. All else equal, when output growth is positive, a larger *RAR* signals that growth is increasing non-vulnerable employment and shedding vulnerable employment at a faster rate when compared to a smaller *RAR*. As noted in section 2, the ideal gap for any given country is context dependent and open to interpretation, but figure 1 is certainly telling of the long run regional trends of the two elasticity measures.

[Insert Figure 1 here]

Focusing on the 16 LAC countries first, the 1990s witnessed reasonably high levels of *NVelast* along with positive *Velast*. For all the countries, real GDP growth was positive over the ten year period, but slow for many. The gap between the two elasticities was the smallest in the first of the three periods suggesting that what output growth that did occur, was accompanied by increases in both non-vulnerable and vulnerable employment. Comparatively, the period from 2000-2007 saw higher rates of real output growth and that growth was associated with decreases in vulnerable employment and a larger responsiveness of non-vulnerable employment. The 7 Asian economies show a similar pattern to LAC economies in that *Velast* is relatively closer to zero in absolute terms illustrating that there may be greater institutional embeddedness of this type of employment (Harriss-White, 2010). Also, the post-2007 period was associated with positive real output growth and increases in vulnerable employment, although Asian economies were better aligned to sustain higher non-vulnerable employment elasticities. Given that the McMillan & Rodrik (2011) study covered up to 2005, Figure 1 reinforces their findings through this lens of employment status.

In summary, for many of the countries, and Latin America in particular, a 1% rate of GDP growth has been much less of a driver toward decent work goals after 2007 than previously as measured by the gap between *NVelast* and *Velast*. Informed by the lessons that were drawn out in previous sections, the next section econometrically estimates *NVelast*, *Velast*, and *RAR* in order to identify how economies' structural features impact the growth-employment relationship.

## 5 The Structural Determinants of (Non-)Vulnerable Employment Creation

This section regresses the non-vulnerable and vulnerable elasticity estimates generated by equations (1) and (2) on a collection of macro-structural and institutional variables. The sample includes the panel of 48 countries listed in appendix 1 with the 20-year span broken into three distinct periods: 1990-1999, 2000-2007, and 2007-2010. Given the contemporaneous nature of the observations the results should be read as correlational only.

Table 1 describes the data. Unless otherwise noted, the data are from the World Development Indicators Database (World Bank, 2012) or the Key Indicator's of the Labor Market (KILM) (ILO, 2012b). Because the dependent variable is itself estimated, it will introduce unwanted heteroskedasticity. To better account for this, all regressions are feasible generalized least squares (fGLS) following the suggestion of Lewis & Linzer (2005). The sample is too small to effectively include country-level fixed effects, so regional slope dummies for LAC are included along with a single LAC intercept dummy. Three categories of correlates are considered: macroeconomy and global position, labor and demographic controls, and governance and institutional quality. The logic behind inclusion of each is considered next, which is then followed by the results.

[Insert Table 1 here]

Beginning with the macroeconomic structure and global position, the volatility of output growth (*Growth Volatility*), share of employment devoted to services and industry (*Serv. Share* and *Ind. Share*), the level of fixed capital investment as a percent of GDP (*GFKF/GDP*), the annual growth rate of manufacturing value added (*Mnf. Growth*), the share of ore and mineral exports as a percent of total merchandise exports (*orexmex*), and the extent of trade integration in the global economy (*trade*) are included. The share of agricultural employment is omitted, so the impact of *Serv. Share* and *Ind. Share* should be interpreted as relative to that of agriculture. Several previous studies find a significant and positive impact of the size of the service sector in total employment elasticities (Crivelli et al., 2012; Kapsos, 2005; Arias-Vazquez et al., 2012; Mourre, 2004; Döpke, 2001). The expectation is that *NVelast* will behave much like total employment elasticity estimates given that, on average, non-vulnerable employment is 75% of the observed total employment for the sample. It is assumed that higher shares of services are associated with lower inter-sectoral productivity gaps, which facilitates the freer flow of labor across sectors. Thus the expectation is that the impact on *NVelast* will be larger and on *Velast* it will be lower (i.e. more negative). Similarly, Crivelli et al. (2012) and Kapsos (2005) find that macroeconomic stability is positively associated with higher employment elasticities. Thus, it is expected that the coefficient on *Growth Volatility* will also be positive for *NVelast* and opposite of that of *Velast*. Regarding the pace of industrialization, *Mnf. Growth* is expected to positively influence the *NVelast* under the assumption that manufacturing growth is necessary for sustained increases in labor demand by manufacturers. With regard to *Velast*, an increase in manufacturing sector growth, all else equal, would increase an economy's ability to shed vulnerable employment to the extent that manufacturing employment demand draws from (and is itself not) vulnerable employment. It is therefore expected that *gMnf* will have a negative impact on *Velast* (i.e. make *Velast* more negative) and thus a positive impact on *RAR*. However, this is

not a strong prior because increases in manufacturing value added may come from productivity enhancements rather than lead to increased labor demand. Thus the expectation for *Mnf. Growth* along with *GFKF/GDP* is ambiguous.

*Trade* is also included to capture the more broad features of an economy's dependence on trade. Exposure to global competition has the virtue of making export sectors more efficient; however, as industries upgrade, rationalize, and become more efficient, the inter-sectoral employment effects depend on what type of employment labor re-allocates to. Given the finding of previously mentioned studies, it is expected that increases in trade dependence positively influence *Velast* and will be negatively associated with *NVelast* and *RAR*.<sup>7</sup> Related to trade integration, Seguino & Braunstein (2012) suggest that increases in the terms of trade due to exports with low price elasticities of demand (e.g. natural resources) may add to the public coffers in ways that support employment expansion, as has happened recently in parts of Latin America. For this reason, the percent of ore and metal exports in merchandise exports (*orexmex*) is included. Richter & Witkowski (2014), Arias-Vazquez et al. (2012), and McMillan & Rodrik (2011) also empirically find a role for natural resource dependence as it is often less employment intensive than other activities. In line with those findings, *orexmex* is expected to positively influence *Velast* and negatively influence *NVelast* and *RAR*.

To further capture features of labor supply and mobility, an index of human capital is included (*hc*) along with a set of labor market controls. *Hc* is an index based primarily on educational attainment and is taken from Barro & Lee (2012). It is expected that higher levels of average human capital will facilitate the movement of labor into non-vulnerable employment and therefore be positively related to *NVelast* and *RAR*, while negatively related to *Velast*. With regard to the labor market structure, the labor force growth rate (*LFrater*) and an index of labor market rigidity (*LMrig*) are included. Increases in the labor force growth rates may have an impact on *Velast* and *NVelast* in opposing ways. On the one hand, increased labor force participation will put downward pressure on wages and upward pressure on the quantity of employment (both vulnerable and non-vulnerable). On the other hand, previous sections argued that increases in the labor force may be partly responsible for the drop in vulnerable employment's share in total employment, thus impacting *Velast* in the opposite fashion. The ambiguity is further clouded by the fact that measurement methods of the labor force will vary from country to country and so the extent to which vulnerable and informal employment is included is not immediately clear. For these reasons, the *a priori* expectation of *LFrater's* impact on *Velast* and *NVelast* is left open.

Lastly, the rule of law (*rule*) captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Data is available from 1996 onward and comes from the Worldwide Governance Indicators (Kaufmann et al., 2010). This is also included as a control without a clear expectation of the net effect of *Rule* on *RAR*, because stronger institutions may crowd in more non-vulnerable employment, but also may increase the regulation barriers that are hypothesized to contribute to informalization of economies in the

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<sup>7</sup>For examples of studies drawing causal links between globalization, liberalization, and informalization, see Standing (1999); Heintz & Pollin (2003).

rational choice literatures. Additionally, it has been argued that the fundamental drivers of growth, such as that of human capital and institutional quality, have had diverse impacts on growth around the world, with Asian growth being driven more by investments in physical capital, and LAC growth by investment in fundamental capabilities (Rodrik, 2014). Given this argument, it would not be surprising to see a stronger impact of the rule of law for the LAC region. Data on the rigidity of labor markets (*LMrig*)<sup>8</sup> is included in light of the legalist view that increased labor market regulation leads to greater informalization of labor and hence increases in vulnerable employment (Krakowski, 2005). If the legalist perspective is accurate, then higher levels of labor market regulation may be negatively associated with both *NVlast* and *Velast*, while having an ambiguous effect on *RAR*.

### **Results**

Table 2 presents the results of three different estimations. All three include LAC slope dummies and period fixed effects. Each of the 48 countries is observed at three different time periods (after constructing elasticities from annual data) for a total of 144 observations. Column (2) reports the impact of structural characteristics on the responsiveness of non-vulnerable employment to output growth. Column (3) does the same for vulnerable employment and column (1) reports estimates when the dependent variable is the the gap between the two elasticities, *RAR*. It is important to recall that *Velast* is most commonly observed to be negative, while *NVlast* is positive. Thus, a positive coefficient on *Velast* and a negative coefficient on *NVlast* suggest elasticities closer to zero and employment that is less responsive to growth. More intuitively, a positive coefficient in column (1), with *RAR* as the dependent variable, suggests that output growth is relatively more biased toward non-vulnerable employment creation.

The results generally confirm the prior expectations, though not all are borne out in statistically significant ways. The macroeconomic structure variables of share of total employment in services and industry are consistent with prior expectations and related employment elasticity studies. Economies with higher shares of services are associated with larger gaps in employment intensities. In particular, a one standard deviation increase in the service share is associated with a .34 unit increase in *RAR*. Of this increase, about half is associated with increases in the non-vulnerable employment elasticity and half decreases in the vulnerable employment elasticity (as evidenced by the disaggregation of columns (2) and (3), though they are not statistically significant). To further put this .34 increase in perspective, this is roughly equivalent to the change in *RAR* from period 1 to period 2 for the Asian economies illustrated in figure 1. An economy's share of employment in industry has the opposite effect and is not observed to have a differential impact for Latin America in this sample. This result is in line with Reardon et al. (2001) which suggested that development programs emphasizing rural non-farm wage income need to focus on the service sector rather than the traditional focus on small

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<sup>8</sup>Of the three time periods, a labor market rigidity index is available from Campos & Nugent (2012) for the first two periods only. The third period index is therefore imputed. Data on the average firm's reported hours per year spent on tax paying issues for period's two and three are available from the World Banks' *Doing Business* database (available at [www.doingbusiness.org/data](http://www.doingbusiness.org/data). Accessed October 2013). To accommodate this structural change in the available data, a third period rigidity index was imputed from the overlapping data of period two. Specifically, the relationship between an average firm's reported hours per year spent on tax paying issues and the available labor market rigidity index was estimated by OLS regression in period two. The resulting period two estimated relationship provides the scalar for a third period imputed labor market rigidity index.

enterprise manufactures. In light of the present study, one could argue that it would also have the benefit of creating the context for growth to be biased in favor of international decent work targets.

[Insert Table 3 near here]

Of the macroeconomic structural variables, the starkest contrast between Latin America and the rest of the sample is the impact of  $GFKF/GDP$ . The relative size of physical capital investment positively impacts  $RAR$  in non-LAC economies, but negatively impacts  $RAR$  in the LAC economies. This result is robust across alternative specifications and is the largest in magnitude. For the LAC economies, an increase in the  $GFKF/GDP$  by one standard deviation is associated with a .76 unit decrease in  $RAR$ . This is roughly equivalent in magnitude to the period 2 to 3 elasticity difference for LAC in figure 1. This result is complimentary to those of McMillan & Rodrik (2011) and suggests that even though within sector productivity gains may contribute to overall productivity growth, but those gains were associated with a vulnerablization of employment for LAC economies.

Of the labor, demographic, and governance measures,  $hc$  and  $rule$  have interesting results as well. For the entire sample, human capital formation is associated with lower  $RAR$ . This may be because of endogeneity or that  $hc$  is picking up features of more developed economies in which growth is more productivity rather than employment intensive. The evidence for LAC, tells an interesting story though. Specifically, human capital formation is associated with lower vulnerable employment elasticities in LAC countries. This suggests that policies leading to higher levels of human capital may influence output growth to be biased toward shedding a greater amount of vulnerable employment. As well, the quality of institutions in LAC as measured by the rule of law raises the non-vulnerable employment elasticity, but there is less evidence of its association with  $Velast$  and  $RAR$ .

Given the precarious nature of vulnerable employment data reporting and the relatively small sample size, the results of Table 2 are checked for robustness. The results are robust to the inclusion of a measure of inter-sectoral productivity gaps (in addition to and in lieu of  $Serv. Share$  and  $Ind. Share$ ). Removal of  $hc$  and  $rule$  do not change the estimated coefficients of the remaining variables appreciably.  $Orexmex$  becomes statistically significant in the expected directions when the high income OECD economies are removed from the sample, but are not robust to the full sample with or without an OECD dummy. Finally, when the sample is reduced to only the 16 LAC economies with country level fixed effects,  $GFKF/GDP$  and  $rule$  are as with the full sample, and growth volatility is negatively associated with  $RAR$ ; however, the degrees of freedom are very low.

A number of caveats and omissions remain and a strict interpretation of larger  $RAR$  measurements being indicative of all aspects of employment quality is discouraged. As laid out in Section 2 the measure of vulnerable employment is but one of many subsets of decent work and the larger concept of quality employment. What is in the best interest of one individual or family in terms of labor supply decisions is extremely context dependent. The measure used in this study does have the virtue of describing long run trends in relative labor absorption rates in to these specific types of employment, but is far from a universal understanding of quality employment. Vosko (2006) reminds us that “understanding precarious work requires thinking outside the labor force - or the sphere of jobs - and re-examining assumptions that are often taken for granted, such as how we define *choice*, *control*, and *constraint*”. The present paper is reluctantly silent on that. Secondly, the claim that a larger elasticity gaps signals growth that is biased in favor of decent work targets

is valid only to the extent that the measure of vulnerable employment overlaps with other aspects of the decent work agenda. The measure does not map entirely into informal employment, though many lessons from the informalization literature were drawn. Lastly, there are likely many omitted variables in the estimations of Table 2 that are potentially important. Løken et al. (2008) lists several key influences on decent work that are missing from this study. Namely, differences in labor standards and enforcement, trade agreements, social conduct initiatives, trade union activity, and the effects of consumer organizations and other non-Governmental Organizations.

Summarizing Table 2, and the tenuous nature of vulnerable employment data notwithstanding, the findings present some evidence that fundamental drivers of growth (human capital formation and quality of the rule of law) were more aligned with decent work progress in Latin America from 1990-2010, while investments in physical capital had been more strongly aligned in non-Latin American economies. The share of an economy's employment devoted to services is observed to have been positively associated with decent work progress across the full sample. Lastly, the study does not find evidence of a significant impact of natural resource dependence, size of government, or international trade dependence on either elasticity measure.

## 6 Conclusion

Relying on vulnerable employment data for 48 countries, this analysis explored the trends and structural influences of vulnerable and non-vulnerable employment creation from 1990-2010. Though the measure of vulnerable employment does not reflect the entire spectrum of employment quality, the long-run trends and circumstances that are associated with growth being biased in favor of decent work targets are drawn out. The paper argues that viewing the gap between an economy's labor absorption rates of non-vulnerable and vulnerable employment provides a unique way of conceptualizing the flow of employment outcomes, with larger gaps signaling growth that is working in tandem with decent work outcomes.

The study found that for many countries around the world, and Latin America in particular, a 1% rate of GDP growth had been much less of a driver toward decent work targets than previously. The tenuous nature of vulnerable employment data notwithstanding, the findings suggest that fundamental drivers of growth (human capital formation and quality of the rule of law) were more aligned with decent work progress in Latin America from 1990-2010, while investments in physical capital had been more strongly aligned in non-Latin American economies. This evidence is in line with prior studies and suggests that even though within sector productivity gains may have contributed positively to overall growth, those gains were associated with a vulnerablization of employment for LAC economies. The share of an economy's employment devoted to services is observed to have been positively associated with decent work progress across the full sample. Lastly, the study does not find evidence of a significant impact of natural resource dependence, size of government, or international trade dependence on either elasticity measure.

Natural extensions center on the possible determinants of labor absorption rates that were not included in this study. In particular, more work needs to be done on the institutional embeddedness of employment outcomes. This includes better inspection of labor market policies, the effects of

global supply chains, gender disparities, and the role of social attitudes toward policies of social protection. A further broadening of the implicit assumptions of choice, control, and constraint is also needed.

By assessing the dynamics of the growth-vulnerable employment nexus, this paper contributes to our understanding of how the global tides are flowing with or against international efforts to achieve decent work for all. The formal inclusion of this target within Millennium Development Goals underscores the study's importance; this is especially meaningful for a post-2015 round of development goals currently situated within growing global inequalities.

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**Table 1: Descriptive statistics**

Variable	Explanation (Source)	1990-1999	2000-2007	2007-2010
		Mean (Std. Dev.)	Mean (Std. Dev.)	Mean (Std. Dev.)
<i>RAR</i>	Relative absorption rate of labor in to non-vulnerable employment relative to vulnerable employment. <i>RAR</i> = <i>NVelast</i> - <i>Velast</i> (author's calculations)	0.86 (1.58)	0.67 (1.14)	0.65 (1.83)
<i>NVelast</i>	Output elasticity of non-vulnerable employment (author's calculations)	0.61 (1.16)	0.58 (0.56)	0.52 (1.37)
<i>Velast</i>	Output elasticity of vulnerable employment (author's calculations)	-0.25 (1.31)	-0.09 (0.89)	-0.13 (1.51)
<b>MACROECONOMY &amp; GLOBAL POSITION</b>				
<i>Growth Volatility</i>	Coefficient of variation of real GDP growth over the period (World Bank)	1.67 (6.53)	2.97 (10.15)	16.7 (71.29)
<i>Serv. Share</i>	Employment in services sector as a share of total employment*100, period average (ILO)	56.37 (11.83)	59.29 (11.31)	61.01 (11.13)
<i>Ind. Share</i>	Industrial employment as share of total employment*100, period average (ILO)	26.43 (6.23)	24.08 (5.93)	23.41 (5.56)
<i>GFKF/GDP</i>	Gross fixed capital formation as a percent of GDP*100, period average (World Bank)	22.06 (4.97)	21.09 (3.55)	21.7 (3.30)
<i>Mnf. Growth</i>	Annual growth rate of manufacturing value added (World Bank)	3.33 (3.67)	4.52 (4.26)	1.45 (3.27)
<i>Orexmex</i>	Ore and mineral exports as a percent of merchandise exports (World Bank)	6.03 (10.05)	6.29 (10.44)	8.06 (13.41)
<i>Trade</i>	Exports plus imports as a percent of GDP*100, period average (World Bank)	79.33 (53.74)	92.93 (64.71)	95.98 (66.44)
<b>LABOR &amp; DEMOGRAPHIC</b>				
<i>LFrate</i>	Total labor force participation rate (World Bank)	61.08 (6.48)	61.61 (6.68)	62.25 (6.51)
<i>Pop. Growth</i>	Average annual growth of population, period average (World Bank)	1.60 (1.06)	1.46 (0.92)	1.43 (0.95)
<i>Labor Mkt. Rigidity</i>	Index of labor market rigidities. See text for methods. (Campos & Nugent 2012, World Bank, & author's calculations)	1.77 (0.52)	1.71 (2.70)	1.63 (0.12)
<i>Human Capital</i>	Human capital index (from Barro & Lee 2010)	2.53 (0.41)	2.70 (0.40)	2.79 (0.37)
<b>GOVERNANCE &amp; OTHER CONTROLS</b>				
<i>Gov. Cons.</i>	Government final consumption expenditure as a percent of GDP, period average (World Bank)	15.77 (5.90)	15.86 (5.08)	16.38 (5.29)
<i>Rule of Law</i>	Confidence in contract enforcement, property rights, etc. -2.5<rule<2.5 (World Governance Indicators)	0.46 (0.90)	0.47 (1.01)	0.45 (1.05)

Notes: All variables are percentages except Growth Volatility, Labor Mkt. Rigidity, Human Capital, and Rule of Law. Summary statistics refer to all 48 countries listed in Appendix A. Where averages are figured and years are missing, the available subset is used.

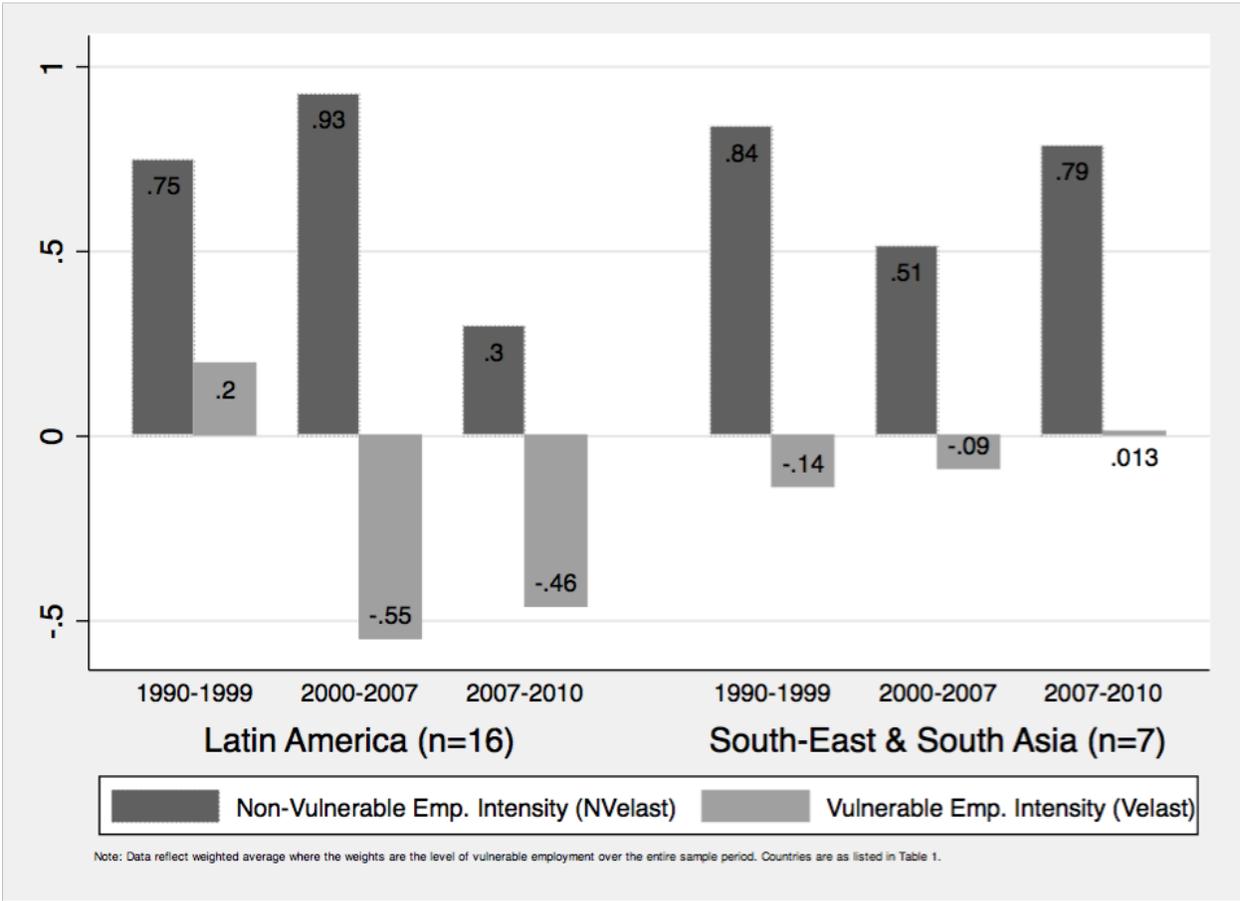
**Table 2: Explaining elasticity gaps: *NVelast* vs *Velast*, 1990-2010**

	Dep. Var. <i>(1) RAR</i>	Dep. Var. <i>(2) NVelast</i>	Dep. Var. <i>(3) Velast</i>
<b>MACROECONOMY &amp; GLOBAL POSITION</b>			
<i>Growth Volatility</i>	0.00 (0.00)	-0.00 (0.00)	-0.00 (0.00)
<i>Growth Volatility x LACdum</i>	-0.10 (0.14)	-0.00 (0.12)	0.05 (0.09)
<i>Serv. Share</i>	0.03** (0.02)	0.01 (0.01)	-0.01 (0.02)
<i>Serv. Share x LACdum</i>	-0.01 (0.03)	0.02 (0.02)	0.02 (0.02)
<i>Ind. Share</i>	-0.05** (0.02)	-0.01 (0.01)	0.04* (0.02)
<i>Ind. Share x LACdum</i>	0.03 (0.09)	-0.00 (0.07)	0.11*** (0.04)
<i>GFKF/GDP</i>	0.08*** (0.03)	0.05*** (0.01)	-0.03 (0.03)
<i>GFKF/GDP x LACdum</i>	-0.27*** (0.06)	-0.11** (0.05)	0.10*** (0.04)
<i>Mnf. Growth</i>	-0.02 (0.02)	-0.04** (0.01)	-0.04 (0.03)
<i>Mnf. Growth x LACdum</i>	-0.10 (0.08)	-0.01 (0.06)	0.07 (0.05)
<i>Orexmex</i>	-0.02 (0.02)	-0.00 (0.01)	0.00 (0.02)
<i>Orexmex x LACdum</i>	0.01 (0.02)	-0.00 (0.01)	0.01 (0.02)
<i>Trade</i>	-0.00* (0.00)	-0.00 (0.00)	0.00 (0.00)
<i>Trade x LACdum</i>	0.00 (0.01)	0.00 (0.01)	0.00 (0.00)
<b>LABOR &amp; DEMOGRAPHIC</b>			
<i>LFrate</i>	-0.02 (0.02)	-0.00 (0.01)	0.02 (0.02)
<i>LFrate x LACdum</i>	0.03 (0.06)	0.04 (0.05)	0.07** (0.03)
<i>Pop. Growth</i>	0.38** (0.15)	0.20*** (0.07)	0.04 (0.14)
<i>Pop. Growth x LACdum</i>	-0.36 (0.31)	-0.11 (0.25)	0.39 (0.24)
<i>Labor Mkt. Rigidity</i>	0.30 (0.26)	0.20* (0.11)	-0.05 (0.27)
<i>Labor Mkt. Rigidity x LACdum</i>	-0.33 (0.61)	-0.14 (0.45)	0.41 (0.43)
<i>Human Capital</i>	-0.54* (0.29)	-0.14 (0.14)	-0.37 (0.31)
<i>Human Capital x LACdum</i>	1.36 (1.00)	-0.56 (0.73)	-1.05* (0.58)
<b>GOVERNANCE &amp; OTHER CONTROLS</b>			
<i>Gov. Cons.</i>	0.03 (0.03)	0.00 (0.01)	-0.01 (0.03)
<i>Gov. Cons. x LACdum</i>	-0.00 (0.06)	-0.04 (0.05)	-0.04 (0.05)
<i>Rule of Law</i>	-0.12 (0.23)	-0.10 (0.08)	-0.20 (0.21)
<i>Rule of Law x LACdum</i>	0.51 (0.42)	0.66** (0.27)	0.25 (0.30)
<i>LACdum</i>	1.38 (6.49)	1.09 (4.72)	-9.29*** (3.10)
<i>Constant</i>	0.20 (1.85)	-0.68 (0.77)	-2.26 (1.79)
<i>Period Fixed Effects</i>	(included)	(included)	(included)
Observations	144	144	144
Number of Countries	48	48	48

Notes:  $RAR = Nvelast - Velast$ . All regressions are fGLS. Standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

Figure 1: Trends in (non-)vulnerable employment elasticities: 1990-2010



**Data Appendix A: Country sample list and select statistics**

Country	Vuln. Emp. (%)			RAR			NVelast			Velast			GDP growth (%)		
	'90- '99	'00- '07	'07- '10	'90- '99	'00- '07	'07- '10	'90- '99	'00- '07	'07- '10	'90- '99	'00- '07	'07- '10	'90- '99	'00- '07	'07- '10
<i>Latin America &amp; Carribean</i>															
Bolivia	44.4	61.4	56.3	1.1	3.3	-3.4	2.3	2.9	-3.8	1.2	-0.5	-0.4	4.0	3.5	4.5
Brazil	33.2	30.5	25.8	0.7	1.8	2.4	0.6	1.1	0.9	-0.1	-0.8	-1.5	1.7	3.4	4.6
Chile	27.1	27.5	25.0	-0.2	1.2	0.9	0.1	0.8	0.7	0.3	-0.4	-0.2	6.4	4.4	3.4
Colombia	29.6	44.7	46.6	-0.6	0.9	-1.1	0.2	0.6	-0.1	0.8	-0.3	1.0	2.9	4.5	4.0
Costa Rica	22.7	22.2	20.0	1.1	1.4	1.0	0.7	0.9	1.3	-0.4	-0.4	0.3	5.5	5.3	3.6
Dominican Republic	40.5	42.0	41.9	0.0	0.3	1.3	0.3	0.4	0.4	0.3	0.1	-0.9	6.1	5.3	6.2
Ecuador	34.4	42.6	42.0	2.0	0.6	0.1	1.6	0.5	0.4	-0.4	-0.1	0.3	1.8	5.0	3.3
El Salvador	36.5	37.1	37.0	0.3	1.2	2.3	0.4	0.8	1.0	0.1	-0.4	-1.3	4.9	2.8	0.8
Honduras	48.1	49.2	51.2	2.2	0.6	-4.0	2.2	0.6	-3.5	-0.1	0.0	0.6	3.1	5.2	2.8
Jamaica	38.9	35.8	35.6	1.4	2.5	6.1	0.5	1.9	3.4	-0.9	-0.7	-2.7	1.9	1.9	-1.1
Mexico	35.8	31.5	29.4	0.9	1.1	0.5	1.2	0.5	0.4	0.3	-0.6	-0.1	3.2	2.5	0.9
Panama	31.2	30.7	29.5	1.2	1.1	0.2	0.9	0.8	0.4	-0.4	-0.2	0.2	5.6	6.1	8.4
Paraguay	33.7	50.1	45.2	3.3	1.1	1.5	6.6	0.9	1.0	3.3	-0.3	-0.5	2.5	3.4	5.9
Peru	38.6	36.0	42.9	-3.2	2.2	-2.8	-2.7	1.4	-1.1	0.5	-0.8	1.6	3.2	5.4	7.1
Uruguay	23.0	25.3	23.5	3.3	2.1	1.5	1.3	1.7	0.8	-2.0	-0.4	-0.7	3.7	1.8	6.3
Venezuela, RB	33.2	33.2	31.4	1.2	1.1	0.3	1.3	0.7	0.5	0.1	-0.5	0.2	2.5	4.9	2.3
<i>South Asia</i>															
Pakistan	64.0	61.5	62.4	2.0	0.8	-1.7	1.8	0.8	-0.4	-0.1	0.0	1.3	4.0	5.3	3.8
Sri Lanka	38.7	39.6	41.0	0.3	-0.2	0.4	0.3	-0.2	0.6	0.1	0.0	0.2	5.1	4.9	6.1
<i>South-East Asia</i>															
Indonesia	64.1	64.2	62.0	0.8	0.5	1.7	0.5	0.4	1.3	-0.2	-0.1	-0.4	4.8	5.1	5.8
Malaysia	24.7	21.5	21.4	1.3	0.2	1.7	0.8	0.3	1.0	-0.4	0.1	-0.7	7.2	5.2	4.2
Philippines	45.3	44.5	42.5	0.1	0.7	1.2	0.6	0.6	0.8	0.5	-0.1	-0.4	2.8	5.0	4.9
Singapore	8.3	9.4	9.8	-0.1	-0.6	2.9	0.0	0.1	2.5	0.2	0.8	-0.4	7.3	6.0	6.1
Thailand	63.2	54.9	53.2	1.1	0.9	0.8	0.7	0.6	0.8	-0.3	-0.3	0.0	5.3	5.1	3.3
<i>East Asia</i>															
Japan	16.0	12.3	10.5	3.7	2.4	-0.7	0.9	0.3	0.2	-2.8	-2.1	0.9	1.5	1.4	0.0

**Data Appendix A (continued): Country sample list and select statistics**

Country	Vuln. Emp. (%)			RAR			NVelast			Velast			GDP growth (%)		
	'90-'99	'00-'07	'07-'10	'90-'99	'00-'07	'07-'10	'90-'99	'00-'07	'07-'10	'90-'99	'00-'07	'07-'10	'90-'99	'00-'07	'07-'10
<i>Sub-Saharan Africa</i>															
Namibia	35.9	25.3	24.6	3.4	0.4	0.7	0.3	-0.8	5.6	-3.1	-1.3	4.9	4.3	5.4	3.7
<i>Middle East &amp; North Africa</i>															
Egypt, Arab Rep.	25.6	24.2	25.1	1.3	-0.2	2.2	0.6	0.5	1.2	-0.7	0.7	-1.0	4.3	4.5	6.0
<i>Central &amp; Eastern Europe</i>															
Croatia	20.9	18.5	17.0	2.8	0.6	1.5	0.6	0.3	0.2	-2.3	-0.3	-1.3	1.6	4.6	0.0
Czech Republic	8.3	12.1	13.3	-2.7	-0.2	-0.7	-0.3	0.1	0.1	2.4	0.3	0.8	0.1	4.8	1.7
Hungary	8.6	7.8	6.9	-2.6	0.8	0.4	-0.5	0.1	0.5	2.1	-0.7	0.1	0.4	3.5	-1.1
Latvia	13.6	9.4	7.4	-0.4	1.0	1.0	0.1	0.3	0.7	0.5	-0.7	-0.3	3.0	9.0	-3.1
Poland	25.3	22.5	18.8	0.8	1.3	1.0	0.2	0.5	0.6	-0.6	-0.8	-0.4	3.8	4.1	4.4
Slovak Republic	4.5	7.7	11.5	-0.2	-1.4	-1.2	0.1	0.2	0.1	0.3	1.6	1.3	0.3	6.2	3.9
Slovenia	14.1	12.3	12.8	-0.6	0.3	2.1	0.1	0.3	0.6	0.8	0.1	-1.5	1.7	4.4	1.0
Turkey	49.7	42.5	33.6	1.4	1.3	1.3	0.3	0.5	1.2	-1.1	-0.7	-0.2	4.0	5.0	2.4
<i>Western Europe</i>															
Australia	11.0	10.0	9.1	0.7	1.2	1.4	0.5	0.8	0.8	-0.2	-0.5	-0.7	3.4	3.3	2.8
Austria	9.0	8.5	9.0	0.9	-0.2	0.0	0.1	0.3	0.4	-0.8	0.5	0.4	2.8	2.3	0.9
Denmark	5.9	5.0	5.2	1.4	-0.2	1.6	0.2	0.3	0.6	-1.2	0.5	-0.9	2.4	1.6	-0.9
Finland	11.2	8.8	9.1	1.9	0.5	1.4	0.6	0.3	0.4	-1.3	-0.2	-0.9	1.7	3.3	0.3
Germany	5.6	6.6	6.8	-0.5	-1.4	-0.2	-0.4	0.5	0.3	0.2	1.9	0.5	1.8	1.4	0.7
Iceland	12.0	9.5	8.3	1.2	1.0	0.4	0.5	0.4	0.5	-0.7	-0.6	0.1	2.3	4.6	-0.9
Italy	18.4	17.5	18.5	3.5	-3.0	-0.5	0.5	0.5	0.1	-3.0	3.5	0.6	1.4	1.3	-0.8
Luxembourg	5.5	4.5	5.0	2.4	-1.3	4.5	0.1	0.3	-0.8	-2.3	1.6	-5.2	4.8	4.2	1.2
Netherlands	8.3	8.4	10.1	1.0	-0.8	-0.6	0.7	0.3	0.0	-0.3	1.1	0.5	3.2	2.0	1.0
Norway	6.4	6.0	5.7	0.5	-0.1	3.9	0.7	0.3	0.5	0.1	0.4	-3.4	3.6	2.3	0.4
Portugal	21.8	20.0	17.9	0.4	1.8	-2.5	0.3	0.6	0.6	-0.1	-1.2	3.1	3.0	1.1	0.2
Spain	19.8	13.2	11.5	2.5	2.1	0.6	1.0	1.3	2.4	-1.5	-0.8	1.8	2.7	3.4	0.1
Sweden	7.8	6.8	6.8	1.2	0.6	0.5	0.3	0.3	0.3	-1.0	-0.2	-0.1	1.8	3.0	1.0
Switzerland	10.0	10.2	9.5	-2.7	1.2	-0.3	-0.3	0.6	-1.3	2.5	-0.7	-1.0	1.1	2.0	1.6

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The working papers listed below may be obtained by sending a check (payable to the University of Rhode Island) for the indicated amount to Professor Burkett.

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