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A Literature Review on Trade and Informal Labour Markets in Developing Countries

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Abstract

A LITERATURE REVIEW ON TRADE AND INFORMAL LABOUR MARKETS IN DEVELOPING COUNTRIES

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This report provides a summary of the literature on the relationship between trade and informality in developing countries, with an emphasis on the BRIICS. While main conclusions of the ILO and WTO (2009) literature review are highlighted, the report focuses on additional and more recent literature. The report investigates four key issues in the literature on trade and informal labour markets: (1) theoretical predictions for trade and informality; (2) how trade liberalisation affects informal labour markets; (3) how trade flows affect the informal economy; and (4) what implications informality has for trade and growth. The main conclusion from this review is that empirical evidence on the relationship between trade and informality is complex and context-specific. Several of the empirical analyses reviewed in this report suggest that this variation is due to country-specific characteristics (in particular, labour market rigidity, capital mobility, level of economic development and heterogeneity of the informal workforce). Variation can also be partly explained by the fact that different methodologies are used and different measures of informality are employed across studies.

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Executive Summary

In recent decades, trade liberalisation has spread and informal labour markets have expanded. These concurrent trends have prompted a growing interest in the relationship between globalisation and informality. While it is widely agreed that globalisation has fuelled the rapid expansion of many emerging economies, its relationship with the informal labour market is less straightforward. As such, a vast literature has emerged to better understand the linkages between trade and informality. This report focuses on four key themes in the literature on trade and informal labour markets in developing countries, with an emphasis on the BRIICS.¹ The four themes are: (1) theoretical predictions for trade and informality; (2) how trade liberalisation affects informal labour markets; (3) how trade flows affect the informal economy; and (4) what implications informality has for trade and growth.

A review of the theoretical literature reveals two main frameworks that are useful in explaining the effects of trade on the informal labour market: the Heckscher-Ohlin model and the Harris-Todaro framework. The literature on new economic geography also provides interesting applications for the relationship between trade and informality. Moreover, the theoretical literature highlights a range of mechanisms through which opening to trade can affect informality. Lastly, theory suggests that the effect of trade on informal labour markets can differ in the short and long run. In particular, it seems that trade opening leads informal economies to expand in the short run, but that the formal sector can expand (and the informal economy can contract) through adjustment in the long run.

While trade theory provides numerous predictions for the relationship between trade and informality, the empirical evidence to support these predictions is limited. In terms of the impact of trade liberalisation on informality, cross-country and country-level studies provide a mixed picture. In line with theory, there is some evidence to suggest that trade liberalisation leads to rising informality in the short run. On the other hand, micro-level analyses point to the importance of country-specific characteristics. Empirical work on the relationship between trade and informal wages is more limited.

Evidence on the implications of trade flows for informality is slightly more robust. Three conclusions emerge from the literature on this issue. First, empirical evidence on the relationship between trade flows and informality suggests that country characteristics matter. Rising trade intensity has been associated with both increases and decreases in informality. Second, the fluctuation of trade flows during business cycles seems to have varying effects on informal labour markets. There is evidence of both countercyclical and procyclical expansions of the informal economy, which is consistent with views that the informal economy is heterogeneous in nature. Third, there is widespread evidence that the global downturn in trade has negatively affected informal labour markets in

1. BRIICS is an acronym for Brazil, Russia, India, Indonesia, China and South Africa.

developing countries. However, the literature suggests that the negative consequences of falling demand have not affected all informal labour markets homogeneously.

Literature on the implications of informality for trade and growth is more limited. Economic theory predicts several ways that informality can affect trade and growth. In particular, informal economies are expected to constrain export diversification, hinder economic growth and foster vulnerabilities. On the other hand, informal economies can also support formal economies in some ways, for example by facilitating adjustment in cases where rigidities may impede formal sector responsiveness. However, empirical evidence of all of these effects is negligible.

A key theme emerging from this review is that empirical evidence on the relationship between trade and informality is complex. One of the main reasons for this complexity is that there are numerous mechanisms through which trade can affect informality, and certain mechanisms may be more prominent in some countries than in others. The literature also points to several country-specific factors as key determinants of the relationship between trade and informality. In particular, variations in labour market rigidity, capital mobility, level of economic development, heterogeneity of the informal workforce, technological intensity and cultural norms all seem to play a role. Coupled with methodological variations and data limitations, unravelling the complex relationship between trade and informality remains a challenge.

While empirical evidence on the relationship between trade and informality is growing, this review identifies substantial gaps in the literature. To gain a more comprehensive understanding of the relationship between trade and informality, a closer look is needed at how trade impacts the quality of jobs. In particular, empirical analyses of the following three questions could provide a valuable contribution to our understanding of the relationship between trade and informality. First, is there evidence that trade opening widens the formal-informal wage gap through the spread of formal-biased technological change? Second, how is the informal economy affected by shifts in global trade patterns? Finally, how does the relationship between trade and informality vary across the BRIICS? Significant value could be added by conducting country-level investigations into the relationship between trade and informality in these countries.

1. Introduction

In recent decades, the relationship between globalisation and informality has received considerable attention. While it is widely agreed that globalisation has fuelled the rapid expansion of many emerging economies, its relationship with the informal labour market is less straightforward. As such, a vast literature has emerged to better understand the relationship between trade and informality.

One of the main motivations for research in this area is the rising contribution of world trade to world GDP in recent decades. The volume of world trade represented more than 61% of world GDP in 2007 (ILO/WTO, 2009), which points to strong linkages between trade and employment. Further interest in this issue has been prompted by the global recession and the recent downturn in trade. From 2007 to 2009, real wages declined and underemployment² and unemployment levels rose in developing countries (Jansen and von Uexkull, 2010). A question remains as to what extent these trends can be explained by the 12% decline in world trade in 2009 and whether there were different effects on formal and informal employment? Given that trade flows will continue to fluctuate and evolve, it is critical to gain a better understanding of the linkages between trade and informality.

Much of the literature on globalisation and employment focuses on the informal economy because of its importance from a development perspective. One half to three quarters of non-agricultural employment in developing countries is informal (Chen, forthcoming).³ While there are varying definitions of the term ‘informality’ (Section 2), the informal labour market is generally associated with lower wages and greater vulnerability. Most of the working poor⁴ are in the informal economy. Moreover, informal labour markets tend to have a higher proportion of female workers (Chen, 2007). Lastly, in addition to less job security and reduced access to social benefits, informal workers also have lower participation rates in formal education and public training programs than formal workers (Kucera and Roncolato, 2008).

There is also evidence that informality has implications for trade and growth. According to the ILO and WTO (2009), large-scale informality may prevent some economies from fully benefiting from global integration. There is some evidence that informality increases inequality and reduces efficiency (thus, constraining GDP growth). Informality also hinders export diversification and upward movements in the value chain (ILO/WTO, 2009). These findings appear in line with the trends found in a 2002-03 survey by Schneider (2005), indicating that the informal economy comprised an average 39% of GDP in 96 developing countries versus only 16% of GDP in 21 OECD countries.

Chen (2007) suggests that much of the informal labour force is employed in global production chains. Given the sheer size of the informal economy, it is not surprising that much of the informal labour market is employed by exporting firms or in trade-related

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2. Underemployment is defined by Chen as encompassing those working but not earning enough to escape poverty. Underemployment is a growing problem in the informal economy (Chen, forthcoming).
 3. Chen’s estimates are as follows: 51% in Latin America, 71% in Asia and 72% in sub-Saharan Africa (Chen, forthcoming).
 4. Working poor are defined as individuals earning less than USD 2 per day.

services. Overall, approximately one out of every five jobs is trade-related, either through direct employment by exporting firms or through services for trade-related activities (ILO and WTO, 2009). However, there are no concrete estimates of how many of these trade-related jobs are in the informal economy.

In view of the linkages with trade and development, it is concerning that the rate of informality is increasing in many developing countries (ILO/WTO, 2009; Chen, forthcoming; Yusuf, 2010). This is particularly important with respect to the BRIICS⁵, which represent key players in global demand and supply. In India, 93% of total employment is informal (Chen, forthcoming). In China, 59% of urban employment is informal (Huang, 2009). The share of informal employment in total employment is less significant in South Africa - estimates range from 16% (Verick, 2010) to 34% (Chen, forthcoming).⁶⁷

This report aims to summarise the literature on the relationship between trade and informality in developing countries, with an emphasis on the BRIICS. While main conclusions of the ILO and WTO (2009) literature review are highlighted, the report focuses on additional and more recent literature.

The rest of this report will present a review of several key issues in the literature on trade and informal employment. Section 2 will first summarise the different definitions, origins and measures of informality. Section 3 will provide a discussion of theory and the channels through which trade affects informality. Section 4 will review empirical evidence on the impact of trade liberalisation on the informal labour market. Section 5 will analyse how actual trade flows affect the informal economy, and Section 6 will discuss how the informal economy affects trade and growth. Section 7 will then conclude with a summary of the main findings, possible explanations for heterogeneity in the empirical evidence and suggestions for future research.

2. Definitions of informality

One of the challenges in assessing the impact of trade on informal employment is the multifaceted nature of the term ‘informality’.⁸ The definition of informality has been subject to competing views, numerous debates and frequent transformations in recent decades. According to Schneider and Enste (2000), informal activity is defined as all economic activities in unregistered enterprises that contribute to gross national product (GNP). Others measure informality according to the location of the activity (e.g. home-based, street-based) or the level of organisation. Still others have defined informal workers as those who do not benefit from social security (e.g. health insurance)

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5. BRIICS is an acronym for Brazil, Russia, India, Indonesia, China and South Africa.
 6. Low informality in South Africa is partly explained by the fact that entrepreneurship has been discouraged through the legacy of apartheid policies (Verick, 2010).
 7. Interestingly, Verick (2010) finds that the share of informal employment in South Africa declined during the economic downturn in 2008, while Pretorius (2010) suggests that the size of the informal economy is increasing. At first glance, this suggests that the productivity rate of South Africa’s informal economy might be increasing.
 8. Refer to the ILO and WTO (2009) study for a more in-depth discussion of the evolution of the definition and measurement of informality.

and are not protected by labour regulation (e.g. hiring and firing regulation, minimum wage) (ILO and WTO, 2009).

The most recent ILO definition of informality encompasses many of the elements highlighted above and has been cited frequently throughout the literature. According to this definition, the informal economy⁹ refers to “all remunerative work – both self-employment and wage employment – that is not recognised, regulated or protected by existing legal or regulatory frameworks and non-remunerative work undertaken in an income-producing enterprise” (ILO and WTO, 2009, p. 53). By this criterion, the informal economy includes (1) informal employment in informal enterprises (including employers, employees, own-account operators and unpaid family workers) and (2) informal employment in formal enterprises¹⁰ (including domestic workers, casual or day labourers, temporary or part-time workers, industrial outworkers and unregistered or undeclared workers).

It should be noted that the informal economy encompasses a range of different kinds of workers. While the ILO takes a dualist approach to segmenting employment (into formal and informal employment), others assert that more refined distinctions are needed. For instance, Fields (1990) draws the distinction between two different forms of informal employment: (1) free entry, low-wage employment that is less desirable than formal sector employment and (2) limited entry, high-wage employment that is more desirable than formal sector employment. The second category refers to workers with enough human and financial capital to leave the formal sector and set up a small freelance business (e.g. as a repairmen or a small manufacturer). There is some evidence to support the segmentation proposed by Fields (1990). For instance, according to the Annual National Domestic Survey of Brazil, more than 62% of self-employed men do not want a formal sector job (Maloney, 2004).¹¹

A third classification of employment commonly referred to in the literature is a model developed by WIEGO.¹² Similar to Fields’ approach, the WIEGO framework recognises heterogeneity within the informal economy. Accordingly, informal employment is broken down across a spectrum according to the type and degree of (1) economic risk (of losing job and/or earnings) and (2) authority (over establishment and other workers) (Chen, 2007).¹³

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9. The term “informal sector” has been used in previous definitions, and it refers to employment in informal enterprises. The most recent definition of informality, which includes informal workers in both informal and formal enterprises, is referred to as “informal employment” or the “informal economy” (Chen, forthcoming).
 10. Firms are classified as informal according to their size and registration status.
 11. Similar findings have been highlighted in the literature on part-time work: part-time employees tend to have lower average wages and education levels than full-time employees, but OECD (1999) found that many people prefer to work part-time in OECD countries. Worker preferences in developing countries are less well documented.
 12. Women in Informal Employment: Globalizing and Organizing (WIEGO)
 13. In recognition of these different forms of informality, the literature has begun to investigate the relative size of each segment of the informal economy, as well as what factors affect them.

Why does informality exist?

To understand the relationship between trade and informality, it is important to understand the drivers of informality. Historically, there have been four dominant schools of thought on why informality exists: (1) dualists initially explained informality as the result of a mismatch between labour demand and labour supply; (2) legalists then asserted that informal workers were micro-entrepreneurs avoiding the costly regulations and hostile legal environments; (3) structuralists suggested that informality is the result of exploitation and subordination of informal workers by capitalist firms; and (4) voluntarists argued that entrepreneurs make a calculated decision to exit the formal sector. Today, there is a growing recognition that all four theories have an element of truth and that some are more valid than others for different segments of the informal economy (ILO/WTO, 2009; Chen, 2010). For instance, in the case of Argentina, Arias and Khamis (2008) find preliminary evidence of both the dualist and voluntarist schools of thought.

How do we measure informality?

A range of measures for informality has emerged in response to the multifaceted nature of informality, its frequent evolution and the challenge in standardising measurement and data collection across countries. Nearly all empirical studies adopt a more narrow definition than the ILO version in order to comply with data availability.

In practice, informality is most commonly classified according to:

- firm characteristics (drawn from firm-level surveys of household enterprises);
- job characteristics that are designated as belonging to the informal or formal sector;
- social protection coverage (gathered from self-assessments in labour force surveys);¹⁴
- non-agricultural informal household sector value-added as a share of GDP (using household survey and national accounts data) (ILO and WTO, 2009); and
- estimates of informality in production, also known as the shadow economy (Schneider, 2005; Schneider and Enste, 2000).¹⁵

Logically, the size of the informal economy varies significantly according to the criteria used. For instance, estimates of the shadow economy are typically lower than those measured on the basis of employment because productivity tends to be lower in the informal economy than in the formal sector. Estimates can even vary within each definition. For example, Schneider and Enste (2000) note that estimates of the size of the shadow economy change in response to tax reforms.

The examples below illustrate varying operational definitions of informality across countries and across studies:

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14. In Colombia, Goldberg and Pavcnik (2003) and Attanasio, Goldberg and Pavcnik (2004) categorize workers according to whether or not their employer pays social security taxes.
 15. Schneider (2005, Appendix) lays out three approaches to estimating informality: direct approaches (e.g. using surveys or tax audit data), indirect approaches (e.g. using statistical discrepancies between national income and expenditure data), or modelling approaches (e.g. that take into account unobserved variables).

- *Brazil*: According to Rani (2008), the informal economy covers enterprises with fewer than five workers, entrepreneurs, self-employed, unpaid family workers and domestic workers. However, Goldberg and Pavcnik (2003) identify formal workers as those with a “signed work card.”
- *India*: The informal economy covers enterprises with fewer than five workers, entrepreneurs, self-employed, unpaid family workers and domestic workers (Rani, 2008).
- *Indonesia*: The informal economy includes self-employed and unpaid family workers (Sugiyarto, Oey-Gardiner and Triaswati, 2006).
- *China*: The informal economy is defined as the difference between formal employment and the labour force (Ghose, Majid and Ernst, 2008); or as those with no job security, few or no benefits and unprotected by labour laws (Huang, 2009).
- *South Africa*: The informal economy includes workers in businesses that self-declare themselves (Essop and Yu, 2008).

3. Theory on the relationship between trade and informal labour markets

Theory provides several useful starting points for investigating the relationship between trade and informal employment. While goods produced by informal workers are generally not traded on the international market, informal workers may be involved in global production chains or may be affected by trade through indirect channels. It is, thus, useful to investigate the extent to which trade theory can link the recent trends of heightened global integration and rising informality in many developing countries.

This section aims to supplement a discussion of the main themes emerging from the ILO and WTO (2009) review with an analysis of additional theoretical considerations.¹⁶ A wide range of predictions emerge from models about how trade can affect informal labour markets. The first part of this section will discuss the predictions of trade theory with respect to informality. The second part of this section will review several transmission channels through which trade can affect wages and employment levels in the informal economy. The final part of this section will discuss the importance of distinguishing between short- and long-run effects.

Trade theory offers a range of predictions for the informal economy

Two theoretical frameworks prove useful in explaining the effects of trade on the informal labour market, namely, the Heckscher-Ohlin model and the Harris-Todaro framework. The literature on new economic geography also provides interesting applications for the relationship between trade and informality.

First, the Heckscher-Ohlin model and Stolper Samuelson theorem provide preliminary insights into the relationship between trade and informality. Assuming that factors of production are mobile across sectors, the Heckscher-Ohlin theorem suggests

16 For a more in-depth discussion of the theoretical models behind trade and informality, refer to the ILO and WTO (2009) literature review.

that countries will specialise in products that are intensive in use of the abundant factor.¹⁷ Thus, if a country's abundant factor is low-skilled labour, they will have a comparative advantage in low-skilled labour-intensive goods. Building on the Heckscher-Ohlin model, the Stolper Samuelson theorem then suggests that, on average, a rise in the relative price of a good will lead to an increase in the return to the factor that is used more intensively in the production of that good. Thus, if low-skilled labour is the abundant factor, low-skilled wages should rise.

In theory, the Heckscher-Ohlin model can be applied to a world with one formal good and one informal good. Since many developing countries are abundant in low-skilled labour (relative to developed countries), one can assume that an average developing country has a comparative advantage in low-skilled labour intensive goods. Thus, if the informal good employs low-skilled labour more intensively, developing countries should have a "comparative advantage" in the production of informal goods. But in practice, this does not seem to occur. As low-skilled labour tends to be positively correlated with informality in the developing world, low-skilled workers producing the informal good should benefit from trade opening. However, there is little evidence that trade opening has led to higher returns to informal workers in developing countries. Overall, one can say that empirical findings do not allow us to make any direct links between theoretical prescriptions of the Heckscher-Ohlin model and the actual informal sector dynamics. This is hardly surprising given the difficulty in making forecasts about the impact of country's endowments and trade outcomes.¹⁸

Indeed, while these models provide a useful theoretical framework, applications of a general equilibrium model are limited and much of the empirical evidence is inconsistent with trade theory's predictions (Goldberg and Pavcnik, 2007). For instance, trade models are more relevant in relative terms than in absolute terms for trading mammoths such as the BRIICS. The fact that informality tends to be positively correlated with non-tradables also limits the predictions of trade theory. Moreover, most trade models do not consider the large reserves of underemployed and unemployed workers found in many countries.

The literature on skill-biased technological change could also explain the limitations of trade theory in explaining rising informality in recent decades. The rising skill premium in developed and developing economies has been explained by the spread of skill-biased technological change through trade opening (Pavcnik, 2003). A similar argument could be made that the predictions of Stolper-Samuelson are not realised because of formal-biased technological change. Technology is biased toward the formal sector because of the wider availability of investment and skilled labour in the formal economy than in the informal economy. This bias increases the demand for formal workers, thus, widening the wage gap between formal and informal workers. The fact that trade opening promotes the spread of technology could, thus, explain an increase in the formal wage premium.

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17. A simple Heckscher-Ohlin model assumes two factors of production, two countries and two products. In the real world where there are more sectors than factors, this relationship becomes less clear but is expected to hold on average.
 18. The difficulty in making direct predictions about the country's specialisation patterns based on abundance of their factors of production as outlined in Heckscher-Ohlin is well illustrated by the discussion surrounding the Leontief paradox. In 1954, Leontief found that the United States - the most capital-abundant country in the world - exported labor-intensive commodities and imported capital-intensive commodities, in an apparent contradiction with Heckscher-Ohlin theory.

One could also argue that a source of comparative advantage is a country's quality of formal institutions and, in particular, contract enforcement. Countries with strong contract enforcement are more likely to export goods for which intermediate inputs require contract enforceability. Nunn (2007) finds that contract enforceability is a primary determinant of a country's comparative advantage. According to Nunn (2007, p. 570), "contract enforcement explains more of the global pattern of trade than countries' endowments of capital and skilled [labour] combined." Countries with good contract enforcement are more likely to export goods for which the intermediate inputs are more dependent on relationship-specific contracts. As contract enforceability is characteristic of countries with a strong formal sector, this could broadly be interpreted as a comparative advantage in formal labour-intensive goods. Accordingly, as developing countries tend to have relatively weak contract enforcement, they are expected to specialise in informal labour-intensive goods, on average. However, once again, there is little empirical evidence that the informal sector reaps higher returns when they have such a comparative advantage.

Marjit, Kar and Beladi (2007) provide an alternative application of the standard Heckscher-Ohlin-Samuelson framework that sheds some light on the relationship between trade and informality. In particular, they show that if trade liberalisation leads to a contraction of the formal sector, informal employment and informal wage levels can both rise. This is possible under several assumptions. First, both the import-competing good and the export-oriented good have formal and informal labour segments. Moreover, workers are only in the informal sector if they cannot find a job in the formal sector. Lastly, capital is mobile across sectors, but not across segments (i.e. within one sector, from informal to formal and vice versa). Based on these assumptions, if trade liberalisation leads to falling capital prices, the formal sector producing the import-competing good may contract and aggregate informal employment may be expected to rise.¹⁹ Furthermore, informal wages will rise, if the informal import-competing good is capital-intensive relative to the informal export-oriented good (ILO/WTO, 2009).

A second model that offers limited insights into the relationship between trade and informality is the Harris-Todaro framework. In the original setting of this dual economy model, there is the formal sector and the agrarian, or rural, sector. Due to the difference in productivity levels and wage disparities between these two sectors, workers migrate to urban areas to reap the expected financial gain of formal wages relative to agrarian wages. However, many migrants fail to get a formal job and end up in the informal sector with a lower wage. If productivity in the agrarian sector increases at a later date, this may reduce the size of the informal sector. Harris and Todaro conclude from this model that a good policy to reduce informality is to enhance productivity in the agrarian economy (rather than simply promoting productivity in the formal sector).²⁰

19. However, the informal segment of the export-oriented sector may contract with trade opening. The overall size of the export-oriented sector is also ambiguous, as it depends on the relative strength of changes in its formal and informal segments (Marjit et al., 2007).

20. The Harris-Todaro framework is consistent with the dualist model of the informal economy, the idea being that informal workers are disadvantaged and cannot get jobs in the formal sector. However, comparative advantage is more consistent with voluntarists' theory, that workers maximize their utility by choosing to work in the formal or informal sector. Independently, neither presents a very accurate picture of the labour market.

Finally, new economic geography provides interesting insights into the persistence of informality in developing countries that have opened to trade. New economic geography theory predicts that the spread of south-south economic integration schemes is detrimental to the growth of developing countries because it encourages specialisation in regional comparative advantages, as opposed to global comparative advantages. In other words, preferential treatment within regional economic communities will encourage the growth of industrial production in a country with a comparative advantage relative to its geographic neighbours, but not necessarily to its potential global trading partners. This arrangement lowers welfare in the developing country because other global producers could produce the goods more efficiently. New economic geography experts assert that such a situation has emerged with the spread of regional economic communities in Sub-Saharan Africa (SSA). SSA countries have historically traded with developed countries and are increasingly trading with emerging markets such as China. The spread of regional economic communities within SSA is likely to redirect production to sectors, in which countries are efficient relative to other community members but inefficient relative to global producers (OECD, 2010). In sum, new economic geography predicts that regional economic communities discourage members from developing their true comparative advantages. We can extrapolate from this that the inefficiencies fostered by neglected comparative advantages could be contributing to either persisting informality or higher unemployment in developing countries in SSA and other regions.

There are numerous mechanisms through which trade affects informal labour markets

The literature highlights a range of mechanisms through which opening to trade can affect informality. In particular:

- Trade opening could lead to an increase in competition. In turn, rising competition could result in greater uncertainty in product demand, leading firms to rely more on informal employment and/or to push for more flexible labour regulation on firing workers (Goldberg and Pavcnik, 2007).
- As trade opening leads to expansion of certain sectors, informal employment in sectors producing the intermediate inputs for exports could expand (Fugazza, 2009).
- As discussed earlier, technology spillovers from globalisation could lead to a rising skill premium. As the informal sector tends to have a higher proportion of unskilled workers, a rising skill premium could result in depressed average wages and employment levels in the informal sector.
- If capital moves freely between the informal and formal sectors, informal wages may increase with trade opening. However, if capital movement is constrained and tariff liberalisation leads to a drop in the price of capital,²¹ formal workers will be displaced into the informal sector and informal wages will fall (Marjit *et al.*, 2007; Marjit and Maiti, 2005).
- Lastly, if the informal and formal sectors are disconnected, informal wages may not be affected at all by trade opening in the formal sector (ILO/WTO, 2009).

21. An assumption of this model is that capital is not the abundant factor.

Trade has both short run and long run effects for the informal labour market

Theory also suggests that the effect of trade on informal labour markets can vary in the short and long run. In particular, it seems that trade opening causes the informal economy to expand in the short run, but that the formal sector can expand (and the informal economy can contract) through adjustment in the long run (ILO and WTO, 2009). Thus, it is important to understand how long it takes for the labour market to adjust to trade reforms. Related to this, consideration should be given to what the adjustment costs are (e.g. retraining, income loss when between jobs, moving costs) and what public systems are in place to enable the transition of workers.

In the short run, trade opening can cause levels of informal employment to increase. Vertical linkages between the formal and informal sectors lead to adverse effects in the informal economy as a result of structural adjustments in the formal economy. In particular, contraction of the formal sector can lead to depressed wages and increased competition in the informal economy. As discussed in Box 1, labour market rigidity plays an important role in this adjustment period.

In the long run, however, the economic benefits of trade are expected to strengthen and increase the size of the formal sector. This distinction is consistent with the findings of the ILO and WTO (2009) empirical analysis, which suggests that trade reforms are associated with higher levels of informal employment, whereas rising trade flows following the reforms are associated with lower levels of informal employment. The decline in informal employment found in this and other studies (e.g. Fugazza and Fiess, 2010) suggests that rising trade levels have triggered an increase in productivity in the informal economy.

Box 1. Why does labour regulation matter?

Labour market rigidity is an important determinant in the relationship between trade and informality. Much of the literature argues that rigid labour markets are associated with higher informal employment (e.g. Botero, Djankov, Porta, and Lopez-De-Silanes, 2004; Besley and Burgess, 2004; Mondragon-Velez, Pena and Wills, 2010). This box will highlight the main findings of the literature on how labour standards interact with trade and informality.

According to the ILO and WTO (2009), labour market regulation explains more than 50% of the total cross-country variation in informality rates. Informal employment tends to be lower in countries that have: “a) better enforcement of the rule of law, including core labour standards, b) well-designed social protection and labour regulations, notably appropriately set minimum wages; and c) more transparent business regulations and a more supportive environment for sustainable enterprise creation” (p. 114). While this is not evidence of a causal link, it provides useful insight as a correlation.

Labour regulation could have a range of effects on labour markets in developing countries. More regulation could translate into higher costs for firing workers and, thus, could increase the size of the informal market by discouraging employers from hiring formal workers. Deregulating the labour market could lead to falling formal wages (thus narrowing the formal-informal wage gap) as employers become less pressured to maintain minimum wage levels. However, reducing standards for working conditions could translate into lower costs for employers, and these higher returns could be passed on to workers in the form of higher formal wages or higher formal employment. Formal employment levels could also rise as a result of lower market regulation, if labour is a substitute for capital.

The clear linkages between labour regulation and informality also have implications for trade. Developing countries frequently introduce labour reforms in an effort to attract investment and/or promote trade. Trade and labour regulation must be complementary to ensure that the potential benefits of trade reach informal workers. While some bilateral trade agreements have attempted to address the need for complementary labour standards, little empirical work has been undertaken to assess the effect of these inclusions on workers (ILO/WTO, 2009)

4. Empirical evidence on the impact of trade policy on the informal labour market

To understand the scale of trade-related informality, a closer look at the impact of trade policy on the informal labour market is needed. In recent decades, levels of informal employment have been rising and trade liberalisation has spread. To explore the links between these trends, the literature focuses on the impact of trade policy on informal employment levels and informal wage levels.

A range of methodologies have been used to capitalise on the heterogeneity of data sources on informality. In recent years, many studies have applied a cross-country approach to investigating this issue. However, the bulk of the evidence still stems from micro-level analyses. For both methodological approaches, empirical evidence is mixed and limited. This section will first highlight general conclusions and recent findings from cross-country studies, and will then discuss the implications of country-specific characteristics that arise from micro-level exercises.²²

Cross-country analyses reveal conflicting evidence on the relationship between trade liberalisation and informality

Empirical evidence from cross-country studies provides a mixed picture of the relationship between trade policy and informality. For instance, the ILO and WTO (2009) conclude from a cross-country empirical analysis that tariff reductions are associated with higher levels of informal employment. This study constructs a panel of 31 countries from 1990 to 2006, using data on informality from the ILO's Key Indicators of the Labour Market (KILM) database as well as shadow economy estimates by Schneider and Enste (2000).²³

In contrast to the ILO and WTO (2009) findings, Fugazza and Fiess (2010) suggest that the relationship between trade and informality is more nuanced. The authors base their conclusion on three empirical cross-country analyses using a range of micro and macro-level data.²⁴ First, when employing cross-sectional micro-level data, the authors find that trade liberalisation reduces the share of both informal employment levels and output levels. Then, using time series macro-level data, they find some evidence of the reverse, i.e. that trade openness is associated with higher informal employment and output in most countries. Finally, with a dynamic panel dataset, they find trade openness is associated with higher informal output, but lower informal employment. According to the authors, this mixed picture suggests that the productivity of informal workers increases as

22. Refer to the ILO and WTO (2009) study for a more in-depth discussion of the empirical evidence on trade liberalisation and informality.

23. A closer look at the methodology in this study is needed when interpreting the results. The authors try to address the issue of reverse causality in their model, but it still seems to be a concern.

24. Micro-level data is drawn from household surveys and measures informality in terms of informal employment as a share of total employment. Macro-level data is drawn from Kaufmann and Kaliberda (1996) and Schneider (2007) and measures informality in terms of informal output as a share of total output.

a result of trade liberalisation.²⁵ This would occur if trade liberalisation causes only the most productive firms to remain active and expand.

Micro-level analyses suggest that country characteristics matter

The findings from trade and informality studies using micro-level data are also mixed and suggest that country-specific characteristics play a role.²⁶ In broad terms, evidence does point to a modest general trend of trade liberalisation contributing to rising informality. Evidence on the relationship between trade and informal wages is less clear.

Country-specific characteristics seem to explain much of the variation across studies. Hoekman and Winters (2005) note that the heterogeneity of results on this issue is likely driven by differences in labour market rigidity across countries. As discussed earlier in Box 1, there is a range of channels through which labour regulation can affect informality. ILO and WTO (2009) suggest that the relationship between trade reforms and wages may also be affected by the degree of capital mobility and sectoral differences in the reallocation of capital and labour. Moreover, heterogeneity could be driven by an increase in the use of non-tariff barriers (NTBs), which are not taken into account in most empirical studies on this topic. Lastly, the lack of consensus could be partly due to the fact that different methodologies are applied in the country-level studies. However, this would not explain the fact that findings of the cross-country studies are also mixed.

The cases below illustrate the variation in evidence on the relationship between trade liberalisation and informality across countries and across studies for two of the BRIICS countries:

- *Brazil*: Goldberg and Pavcnik (2003) do not find evidence of an impact of tariff reductions on informality.²⁷ Veras (2005) also does not find robust evidence that trade liberalisation affected the share of informal employment in Brazil. However, Veras does find that trade liberalisation contributed to the narrowing wage gap between formal and informal workers.

Bosch, Goni and Maloney (2007) also look at the case of Brazil and assert that the size of the informal economy increased in response to trade reforms. That said, the effect of trade reforms is relatively smaller than the effect of other labour reforms (e.g. rising labour costs and reducing flexibility in 1988 constitutional changes).

- *India*: There is some evidence that trade liberalisation increases informal wages in India through capital reallocation from formal to informal sectors (Kar, Marjit and Sarkar, 2003).

Sinha and Adam (2006) find that trade liberalisation in India in the 1990s led to an increase in the size of the informal economy. Through simulations, they also find that

25. As discussed in the introduction, this seems to corroborate the recent trends in South Africa's informal economy.

26. As discussed in ILO and WTO (2009), the bulk of the literature on trade and informality takes a micro-level approach. Many of these studies focus on Latin American countries because of data availability.

27. This is in contrast with Goldberg and Pavcnik's findings on Colombia in the same paper (2003). The authors find that tariff reductions contributed to rising informality in the period prior to a major labour market reform that increased the flexibility of the Colombian labour market. Interestingly, movement to the informal sector occurred within industries, not between industries.

informal wages would rise from liberalisation under flexible market conditions. However, if the labour market is characterised by real wage rigidity, wages of urban self-employed workers will increase while wages of casual workers will decrease. This second case lends support to the findings of Fields (1990), which suggest that there is heterogeneity within the informal economy.

5. Empirical evidence on how trade flows affect the informal labour market

Another important determinant of the scale of trade-related informality is actual trade flows. In particular, changes in trade intensity, cyclical fluctuations and global downturns all have implications for the informal economy.

This section will review main findings in the literature on how the informal labour market is affected by changes in trade flows. The first part of this section will focus on the impact of trade intensity on informality. The next part will investigate the implications of business cycles for informal employment. The final part of this section will review implications of the global downturn in trade for informal workers.²⁸

Country characteristics matter in the relationship between trade flows and informality

From 1995 to 2005, forty million additional jobs were generated each year as a result of global trade expansion (ILO/WTO, 2009). While growth of the global economy has facilitated job creation, its effect on labour market conditions and the quality of employment is less straightforward.

A survey of the literature indicates that increasing trade flows during this era of globalisation have had a range of effects on the size of the informal labour market.²⁹ Increases in trade intensity have been associated with both increases and decreases in informality. Further research on this topic is needed to identify what is driving the heterogeneity of these results.

In a cross-country study, ILO and WTO (2009) find preliminary evidence that trade intensity is associated with less informality in developing countries, which is a stark contrast to their findings that trade liberalisation is associated with higher informality. This disparity suggests that formal labour markets struggle to adjust to trade reforms in the short run, but economic growth (driven partly by trade reforms) may strengthen and expand formal markets in the long run.

However, other studies paint a more nuanced picture. In particular, Temkin and Veizaga (2010) find that the impact of globalisation on informality depends on a country's level of economic development. In particular, globalisation results in higher informality in developing countries but lower informality in developed countries.

In the case of the BRIICS, it seems that variation in the empirical evidence is due to country characteristics, such as differences in labour market regulation. Differences in

28. Refer to the ILO and WTO (2009) study for a more in-depth discussion of the empirical evidence on trade flows and informality.

29. There is essentially no literature on the relationship between trade flows and informal wages (ILO/WTO, 2009). While rising import penetration has been associated with falling wages of formal workers in several studies, evidence for informal workers is generally lacking.

methodological approaches across studies may also play a role. The following are highlights from the literature on trade flows and informality in two of the BRIICS countries:

- *Brazil*: Goldberg and Pavcnik (2003) find that an increase in export penetration is associated with higher informality, while import penetration is not associated with informality. However, Veras (2005) finds that an increase in import penetration has contributed to the narrowing wage gap between formal and informal workers in Brazil.
- *India*: Sen, Saha and Maiti (2010) find that both pro-worker labour institutions and increases in import penetration are associated with rising informality in the Indian manufacturing sector.

The implications of business cycles for informality are complex

The fluctuation of trade flows during business cycles seems to have varying effects on informal labour markets. The informal economy is traditionally viewed as a buffer for business cycle fluctuations. Informality tends to decline in periods of prosperity and to increase in periods of low economic activity (ILO/WTO, 2009). However, there is also some evidence that the expansion of the informal economy can be pro-cyclical, which points to the existence of microentrepreneurs with stronger linkages with the formal sector. The mixed picture painted by the evidence on business cycles and informality is consistent with a growing realisation in the international community that the informal economy is heterogeneous in nature. As discussed earlier in Box 1, while the majority of informal workers are ‘disadvantaged,’ some work quite willingly in the informal segment of the economy.

Empirical evidence of counter-cyclical expansions of the informal economy is widespread. For instance, Mondragon-Velez *et al.* (2010) find that informality is counter-cyclical and expands during downturns in Colombia. Moreover, it seems that high labour market rigidity (in particular, minimum wage and non-wage costs) hinders the ability of the formal sector to adjust to business cycle fluctuations. However, according to Fugazza and Fiess (2010), counter-cyclical reactions in the informal economy will only occur with certain shocks and under certain regulatory conditions.

There is also growing evidence that rising informality can be pro-cyclical and can be driven by positive shocks to non-tradable sectors. Using time series data from Argentina, Brazil, Colombia and Mexico, Fiess, Fugazza and Maloney (2008) find that increases in relative demand or positive productivity shocks in non-tradables can trigger pro-cyclical expansions of the informal economy. Interestingly, there is also some evidence to suggest that rising female participation has contributed to pro-cyclical increases in informality in Latin America because women entering the workforce as secondary workers are more likely to take informal jobs (Galiani and Weinschelbaum, 2007, as cited by ILO/WTO, 2009).

Loayza and Rigolini (2006) assert that the effect of business cycles on the informal economy is dependent on the type of shock. Symmetrical productivity shocks in the formal and informal segments will prompt a counter-cyclical reaction of the informal labour market.³⁰ However, the implications of an asymmetric shock for the informal

30. The authors note two caveats to this conclusion. First, strong institutions are found to limit the counter-cyclical reaction. Second, the size of counter-cyclical reaction was inversely related to the size of the informal economy.

labour market are more nuanced. The impact of such a shock on informality is dependent on the linkages between the formal and informal segments, as well as the types of products produced (e.g. tradables or non-tradables).

From a political economy angle, it is important to note that fluctuations in business cycles may lead governments to introduce tariff reforms that will in turn affect the probability of informal employment. For instance, if governments increase tariff rates during a recession, this could lead the formal sector to contract and the informal economy to expand (Goldberg and Pavcnik, 2003).

The global downturn in trade has severely impacted informal labour markets in developing countries

The global downturn in trade has had significant implications for informal labour markets. Global production chains have facilitated the swift diffusion of shocks in demand for informal workers. For instance, since the crisis, Indonesia's export levels have fallen while the size of the informal economy has risen sharply (Yusuf, 2010). However, the literature suggests the negative consequences of falling demand have not affected all informal labour markets homogeneously. The rest of this section will assess the extent and nature of the linkages between informal workers and the global downturn in trade.

Using a sample of 41 middle-income countries, Khanna, Newhouse and Paci (2010) find evidence of rising informality in response to the global economic downturn. In particular, they note that the downturn negatively affected the quality of employment more than the quantity of employment. In addition to lower growth in earnings, the authors found a distinct shift in employment from industrial formal sectors to informal and rural sectors.

Canuto and Salazar (2010) suggest that trade shocks adversely affected employment through two mechanisms: (1) lower demand for inputs by exporting companies; and (2) lower demand for final products because of lower household spending. These trends are in line with a survey of 164 informal workers across ten countries³¹ worldwide conducted by Chen (forthcoming). Sixty five per cent of respondents noted their trade volumes or work had decreased over the first six months of 2009. For instance, waste pickers were affected by falling demand for waste materials that are used in the production of packaging materials and other export goods.

Yet overall it appears that the informal economy traditionally increases as a result of crises and economic downturns. But how elastic is the size of the informal economy? Chen (forthcoming) indicates that economic downturns lead to overcrowding in the informal economy. Rising demand for informal employment entails rising competition amongst informal workers. According to the survey by Chen (forthcoming), the majority of informal sector respondents noted new entrants in their occupation or trade.

There is also evidence of significant lag effects of the crisis on the informal economy. In 2010, Chen (forthcoming) conducted a second round of the survey and found that heightened competition persists in the informal economy. While earnings levels have rebounded for some interviewees, many noted that living costs are increasing at a faster

31. Respondents resided in Chile, Columbia, India, Indonesia, Kenya, Malawi, Pakistan, Peru, South Africa and Thailand.

rate than net earnings. Indeed, several studies indicate that business costs for informal workers (e.g. raw materials, food, utilities) have increased (Chen, forthcoming; Jansen and von Uexkull, 2010).

Gamberoni, von Uexkull and Weber (2010) find that global economic downturns have a negative effect on employment, but that this effect is less severe than the effect of domestic debt and banking crises on employment. In the case of domestic crises, trade openness is found to deepen contractions of the formal sector, but openness also facilitates a faster recovery of the labour market. Evidence from their study on the impact of trade openness on employment in global economic downturns is less robust.

Lastly, Jansen and von Uexkull (2010) assert that the effect of crisis-related trade and investment shocks on workers varies across countries. This variation is explained by differences in countries' levels of openness to trade and export structures. In particular, the negative consequences for workers were more severe in countries that were large exporters of products with particularly large trade declines (e.g. iron, steel, automobile parts) (Jansen and von Uexkull, 2010).³²

Country-level evidence from two of the BRIICS provides further indication of variation in the implications of the global downturn in trade for informal labour markets:

- *India and South Africa:* Using social accounting matrices (SAMs) in a Leontief multiplier model, Kucera, Roncolato and von Uexkull (2010) find that the 2008-09 trade contraction in the European Union and the United States triggered substantial declines in employment and income levels in India and South Africa. Many of these declines were for workers in non-tradable sectors and were driven by income-induced effects. The authors speculate that employment declines found in the empirical analysis may reflect transitions from formal to informal market segments.
- *South Africa:* Verick (2010) finds that the global crisis has not had a significant impact on informal employment or unemployment levels. Verick suggests that contraction of the formal sector has resulted in an increase in discouraged individuals who do not actively seek work and thus are not included in unemployment figures.

How will trade with the BRIICS affect informality in other developing countries? Emerging markets (in particular, Brazil, China, India and Indonesia) have become primary buyers of exports from low- and middle-income countries and are expected to drive future trade growth (Freund, 2011; Hanson, 2011). As trade demand is increasingly generated by developing countries (in particular, China), Canuto and Salazar (2010) note that the product and process standards are becoming relatively less important concerns for exporters. According to Canuto and Salazar (2010), this may constrain supplier movements up the value-chain. However, it could also increase the demand, and thus the returns, for informal workers, who tend to be at lower levels of the value-chain.

32. While Jansen and von Uexkull (2010) do not find evidence of gender disparities at the global level, they note that the negative consequences of the trade downturn were biased towards women in Egypt. Women tend to be a larger proportion of the informal economy.

6. Empirical evidence on the impact of the informal labour market on trade and growth

Economic theory predicts several ways that informality can affect trade and growth. However, empirical evidence on the effect of informality on trade and growth is negligible. Most of the literature on this topic is limited to theoretical discussions, which are discussed in great detail in the ILO and WTO (2009) study. In particular, economic theory predicts that informal economies constrain export diversification, hinder economic growth and foster vulnerabilities. However, informal economies can also support formal economies in some ways. This section will discuss the extent to which informality can affect these issues and will highlight recent empirical support for these predictions.³³

Informality may hinder export diversification

Informal economies hinder export diversification by diminishing average firm size, which, in turn, constrains economic productivity. According to the ILO and WTO (2009), a ten percentage point increase in informality is associated with a 10% reduction in export diversification. However, additional empirical literature on this topic is largely undeveloped. “Much of the work in this area relies on indirect inferences and is highly aggregated” (ILO and WTO, 2009, p. 13).

Informality may constrain economic growth

Theory suggests that informality can curb economic growth through several mechanisms. First, the small size of informal firms limits economies of scale, which translates into lower efficiency and thus lower GDP growth. Second, the informal sector has less access to capital, which hinders innovation. Third, informal firms may foster macroeconomic instability where they lack information about profitable opportunities as well as insurance against adverse events. Fourth, large informal economies can limit the capacity of governments to invest in infrastructure, which can curb private sector activity and productivity (ILO and WTO, 2009). Finally, through evasion of taxes and regulations, informal firms can afford to stay in business despite lower productivity than their formal sector competitors (McKinsey, 2004).

There is some empirical evidence in the literature to support the theoretical predictions on the implications of informality for growth. Kucera and Xenogiani (2008, as cited by ILO/WTO, 2009) find evidence of a significant negative association between the size of the informal economy and GDP *per capita*. According to the ILO and WTO (2009), informality can account for up to a two percentage point loss of average economic growth. The ILO and WTO also find that lower informality contributes to a more balanced distribution of gains from trade and growth. In a similar vein, Ihrig and Moe (2000) find that increases in informality negatively impact the growth rate of real GDP per worker using a cross-section of developing countries.

Informality may increase vulnerability to global crises

Furthermore, greater informality can exacerbate economic fluctuations and the volatility of output and consumption levels (Ferreira-Tiryaki, 2008, as cited by ILO and WTO, 2009). “Countries with above average sized informal economies are more than

33. Refer to the ILO and WTO (2009) study for a more in-depth discussion of the empirical evidence on the implications of informality for trade and economic growth.

three times as likely to suffer adverse effects of a crisis than those with lower rates of informality" (ILO and WTO, 2009, p. 102). This is partly because weak institutions and policies may drive both volatility and high informality. It is also related to the fact that informality constrains export diversification, which, in turn, increases vulnerability to global shocks.

However, informal economies may also generate positive economic effects

The informal economy can also promote economic growth in some cases. For instance, the informal economy can produce cheap intermediate inputs, which can then increase the competitiveness of the formal sector's exports. However, empirical evidence suggests that this can lead to lower dynamic gains from trade. This is partly because it is more difficult to increase the skill level of workers and to attract capital in the informal economy (ILO/WTO, 2009).

There is also some empirical evidence to suggest that informal economies can generate positive economic effects. In the case of Russia, Kim and Kang (2009) find empirical evidence that the informal economy supported growth of small enterprises during the transition period from 1992 to 1999. Over time, these informal enterprises tended to shift into the formal sector. Moreover, Dell'Anno (2008) finds empirical evidence that the informal economy helps to sustain economic growth in Latin American countries through procyclicality.

7. Conclusions and suggestions for future work

This report has aimed to present a review of four key issues in the literature on trade and informal employment. In surveying the literature on this topic, efforts have been made to highlight relevant findings from the ILO and WTO (2009) survey and to complement these with a more in-depth look at additional and more recent literature. The survey has focused on developing countries, with a particular emphasis on the BRIICS.

While literature on the relationship between trade and informality is growing, this review finds that there is significant heterogeneity in the empirical findings on this issue. To conclude, this section will first summarise the main findings and policy implications of the literature review. This will be followed by a discussion of the factors that may be driving variations in the empirical evidence. Based on the limitations of the literature, the final part of this section will present suggestions for further research.

Main findings and policy implications

While several modest conclusions emerge, there is significant heterogeneity across the literature on trade and informality. First, cross-country and country-level studies provide a mixed picture of the impact of trade liberalisation on informal employment levels.³⁴ In line with theoretical predictions, there is some evidence to suggest that trade liberalisation leads to rising informality in the short run. On the other hand, micro-level analyses point to the importance of country-specific characteristics.

An important determinant of the scale of trade-related informality is the nature of trade in terms of the actual trade flows. Three conclusions emerge from the literature on this issue. First, empirical evidence on the relationship between trade intensity and

34. Evidence on the relationship between trade and informal wages is even more limited.

informality suggests that country characteristics matter. Rising trade intensity have been associated with both increases and decreases in informality. A closer look at this topic is needed to identify what is driving the heterogeneity of these results. Second, the fluctuation of trade flows during business cycles seems to have varying effects on informal labour markets. There is evidence of both counter-cyclical and pro-cyclical expansions of the informal economy, which is consistent with views that the informal economy is heterogeneous in nature. Third, there is strong evidence that the global downturn in trade has negatively affected informal labour markets in developing countries. However, the literature suggests that the negative consequences of falling demand have not affected all informal labour markets homogeneously.

Literature on the implications of informality for trade and growth is more limited. Economic theory predicts that informal economies constrain export diversification, hinder economic growth and foster vulnerabilities. On the other hand, informal economies can also support formal economies in some ways. However, empirical evidence on the balance of these effects is weak.

While the informal economy is commonly viewed as a cushion in economic downturns, the OECD (2009) warns against dependence on this buffer. In an effort to achieve the Millennium Development Goals (MDGs), a greater focus is needed on the quality of jobs that are created. Policymakers should support not only the unemployed, but also the underemployed and informally employed. In particular, these findings call for more social security to address the vulnerability of informal workers in developing countries. Moreover, in the context of economic downturns, Jansen and von Uexkull (2010) suggest that infrastructure projects in stimulus packages can promote future trade flows and address employment objectives (e.g. by generating short-term employment opportunities for informal workers).

Possible explanations for conflicting conclusions in the literature

A key theme of this literature review is that there is significant heterogeneity in the empirical evidence on trade and informality. This section will discuss the range of factors that drive variation in the relationship between trade and the informal economy, at least for the BRIICS.

One of the main reasons that empirical evidence on this issue is so varied is that there are numerous mechanisms through which trade can affect informality, and certain mechanisms may be more prominent in some countries than in others. For instance, changes in trade policy may trigger increases in competition, technological change and/or rising demand for intermediate inputs produced by informal workers. Each of these channels will have slightly different implications for the informal economy.

The prominence of some mechanisms over others is determined in part by country characteristics. In particular, the literature points to the following country-specific factors as key determinants of the relationship between trade and informality:

- ***Labour market rigidity*** – Most empirical work on trade and informality explain cross-country differences through variation in labour regulation. Rigid labour markets are associated with higher levels of informal employment and are likely to adjust less quickly to trade reforms.
- ***Capital mobility*** – Several studies find that the degree of capital mobility is a key determinant of the sign of the relationship between trade opening and informality (Marjit *et al.*, 2007; Marjit and Maiti, 2005).

- **Level of economic development** – Temkin and Veizaga (2010) find that globalisation results in higher informality in developing countries but lower informality in developed countries. Some cross-country studies on trade and informality have not controlled for the level of economic development.
- **Heterogeneity of the informal workforce** – While most informal workers can be categorised as disadvantaged, Fields (1990) and Chen (2007) point out that some workers prefer to enter the informal economy because it offers better opportunities. In view of this heterogeneity, informal workers may react in different ways to changes in trade policy or trade flows. For instance, informal entrepreneurs may choose to re-enter the formal economy if it becomes less profitable to remain in the informal economy.
- **Technological intensity** – There is some evidence to suggest that technological change is biased toward the formal sector. Under this assumption, the effect of trade opening on the informal economy will be more adverse in developing countries that have more technologically-intense export baskets. Further empirical work on this issue is needed.
- **Cultural norms** – Cultural differences may also explain why the strength of the relationship between trade and informality varies across countries. For instance, Verick (2010) suggest that the informal economy is smaller in South Africa than other BRIICS in part because entrepreneurship has been discouraged by the legacy of apartheid. In such cases, changes in trade are more likely to result in rising unemployment than rising informality.

Variation can also be partly explained by the fact that different methodologies are used and different measures of informality are employed across studies. For instance, while some studies investigate the impact of trade on informal employment levels, others focus on the implications of trade for informal output.

Lastly, there are several issues that have been raised by the literature as important considerations but that are still neglected by most articles. In particular, most empirical studies do not capture variation in short and long run responses to changes in trade. It is very difficult to account for and capture the adjustment period in empirical analyses. Moreover, most analyses do not control for cyclical and pro-cyclical trends in informality unless this is the research question of interest. Furthermore, due to data limitations, few studies incorporate data on the unemployed and underemployed in their analyses. Finally, most studies do not consider implications of the rise of non-tariff barriers to trade (NTBs) for the informal economy.

Scope for future research

To gain a more comprehensive understanding of the relationship between trade and informality, a closer look is needed at how trade impacts the quality of jobs. In particular, empirical analyses of the following three issues could add value and start to fill gaps in the literature:

- First, is there evidence that trade opening widens the formal-informal wage gap through the spread of formal-biased technological change? If technology is biased toward the formal sector because of the wider availability of investment and skilled labour in the formal economy, this could increase the demand for formal workers, thus widening the wage gap between formal and informal workers. The methodology of Pavcnik (2003) could be adapted to investigate this issue.

- Second, how is the informal economy affected by shifts in global trade patterns? Some of the evidence discussed in this literature review suggests that the growing import demand of emerging markets could have implications for informal workers in developing countries. What implications does the income group designation of export destinations have for the size, output and wage levels of informal economies in developing countries? Are sectors with fewer export destinations facing higher levels of informality?

In particular, how has rising trade with China and other emerging giants impacted informal economies in other developing countries? Castro, Olarreaga and Saslavsky (2006) find that only a negligible share of the decline in Argentina's manufacturing employment can be explained by rising imports from China and India. But are there any implications for the informal economy? Does rising demand from BRIICS for 'low standard' products (Canuto and Salazar, 2010) have implications for the informal economy? For instance, does it constrain supplier movements up the value chain, or does it increase the demand (and thus the returns) for low-skilled, informal labour in global production chains? A cross-country empirical analysis (e.g. building on the work of Fugazza and Fiess [2010]) would be useful to gain a deeper understanding of these issues.

- Finally, significant value could be added by conducting additional country-level investigations into the relationship between trade and informality in the BRIICS. To this end, the two-step estimation approach of Goldberg and Pavcnik (2003) could provide a useful standardised approach.³⁵ India and South Africa³⁶ are ideal BRIICS cases in view of data availability and contrasting levels of informality and domestic regulation in these two countries. Studying India and South Africa would also offer a valuable point of comparison to the findings of Kucera *et al.* (2010).

It should be noted that the two-step estimation approach of Goldberg and Pavcnik (2003) could be adapted to include a broader range of trade measures. In particular, the impact of non-tariff barriers (NTBs) on employment could be incorporated.³⁷ It may also be interesting to quantify the impact of import/export quotas on the informal economy.³⁸ Country-level studies such as this might also be conducive to isolating variation in the effect of trade opening across different segments of the informal economy.

Further investigation of these three issues would provide a significant contribution to our understanding of the relationship between trade and informality.

35. The first step of the two-step estimation approach involves use of a linear probability model in the first step, controlling for worker characteristics and industry dummies. Coefficients of the industry dummies are then defined as industry informality differentials and used as the dependent variable in the second step of the estimation approach. Differentials are regressed against import tariffs over time, and the coefficients of the second step are interpreted as measures of the impact of trade liberalization on the informal economy.

36. Goldberg and Pavcnik (2003) have already applied this approach to the case of Brazil.

37. NTB coverage ratios are available from the UN directory of import regimes (Attanasio *et al.*, 2004).

38. Data are available from WITSA or CEPII.

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