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Review

Gender and Comparative Advantage: Feminist–Heterodox Theorizing about Globalization

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Abstract: Heterodox feminist scholars have argued that global trade patterns reflect patterns of competitive advantage—rather than comparative advantage—and that that competitive advantage is gendered. Further, they have suggested that we need more theoretical and empirical scholarship in this area. This paper assesses the state of the literature against this call to action for more feminist–heterodox work on trade, with an emphasis on the manufacturing sector. New strands on the impact of gender on global production have been developed, including (a) integrating gender relations into global value chain analysis, (b) empirical work examining possible trends in the de-feminization of industrial sectors with technological upgrading, and (c) conceptual and empirical work on the interplay between gender, social provisioning, informal work, and the informalization of formal work. The first two strands, although well developed, would benefit from more research that is better integrated with the third strand. Further, this whole range of scholarly work needs to contend more broadly with the causes and effects of persistent gender-based occupational segregation, which underpins all three strands of work. A lot of excellent work has been done, and yet, more scholarship is needed to best understand the extent to which employment in industrial exports can function as a means to gender equity, empowerment, and mobility.

Keywords: gender; heterodox economics; feminist economics; absolute advantage; global value chains

JEL Classification: B54; F16; J16; B27

1. Introduction

Globalization presents many questions about whether the accompanying economic liberalization increases inequality between and within nations, classes, ethnicities, and genders. When it comes to the dramatic growth in the trade of manufactured goods over the last several decades, theorizing about globalization with these questions in mind requires a framework that incorporates the manner in which the social relations of production affect and reflect trade and capital flows. [Elson et al. \(2007\)](#) argued that global trade patterns reflect patterns of competitive advantage—rather than comparative advantage—and that that competitive advantage is gendered. They also argued that we needed more feminist–heterodox formal models and empirical analysis that investigated how gender power relations and inequality affect and reflect these patterns of competitive advantage. Feminist analysis in this area is interested in the causes and outcomes of trade and foreign direct investment patterns with an emphasis on well-being, capabilities, and equity for women and men. Employment is potentially a means to an end, but we want to be clear about what our ends are ([Fukuda-Parr et al. 2013](#)). In particular, feminist scholars are interested in the social foundations that create the conditions for firm-level/industry-level competitiveness, as well as outcomes related to stratification and inequity. This type of analysis results in policy recommendations that would be attuned to the particular aspects of equity and empowerment in which feminist scholars and activists are interested.

This paper assesses the current state of the literature (as it relates to trade in manufacturing) against this 2008 call to action for more feminist–heterodox work on how gender relations figure into trade competitiveness. New strands of more heterodox work on the impact of gender on global production have been developed, including (a) integrating gender relations into global value chain analysis, (b) empirical work examining trends in the de-feminization of industrial sectors upon technological upgrading, and (c) developing frameworks to assess the interplay between gender, social provisioning, informal work, and the informalization of formal work. The first two strands have made real progress in developing frameworks that integrate what we know about trade competitiveness and gender-specific causal factors and distributional effects. The third strand is not as empirically and conceptually robust with respect to the specifics of trade, and it is insufficiently embedded in the work of the first two strands. In addition, all of this work needs to more directly contend with the pervasive trends in occupational segregation that have limited women’s advancement in general and in the industrial sector in particular. Despite ubiquitous claims about the plethora of gains that women workers might achieve as a result of globalization, we have not seen broad or systemic movement in age-old patterns in gendered labor markets. Indeed, it seems increasingly likely that women’s integration into globalized jobs is to some extent conditioned on these old patterns. The work that feminist–heterodox scholars has accomplished has been considerable, and yet, more needs to be done to further our understanding of how gender equity, mobility, and empowerment affect and reflect trade and capital flows.

This paper on the recent history of feminist economic thought on heterodox trade contributes to the literature itself by demonstrating the incredible usefulness of the work that has been done, while also shining light on the need for a more complex analytical frame that can truly integrate the disparate empirical findings into multi-dimensional policy solutions. The paper is structured as follows. Section 2 briefly reviews the heterodox trade literature that made the case that, from an individual firm perspective, absolute advantage and trade competitiveness govern actual trade patterns. As early as the 1980s, feminist scholars considered gendered labor markets to be key to understanding that global competitiveness, which also ties this combination of work to the development and use of the global value chain framework. Section 3 turns to more recent literature to identify new developments and deficits in our collective understanding of how gender relations impact and reflect cost competition in global trade, with an emphasis on de-feminization and growing informalization. Section 4 synthesizes the results of the review and presents recommendations for avenues of work that can address the deficits. It argues that contemporary scholarship on gender and trade competitiveness has to better contend with the informalization of labor markets (due to increased fragmentation as well as the deterioration of the labor contracts) as well as stubborn global trends in gender-based occupational segregation.

2. From Competitive Advantage to Engendered Global Value Chains

Milberg (1994a) argued that absolute advantage rather than comparative advantage was a more useful way to think about international trade flows. This framework for understanding trade comes out of a rich heterodox tradition of post-Keynesian and Marxian analysis of uneven development related to trade and capital flows (see as examples Hymer 1979; Emmanuel 1972; Shaikh 1979; Edwards 1985) as well theories of unequal exchange (Prebisch 1950; Singer 1950; Maizels 2000). The various frameworks discussed below are all outgrowths of these heterodox views on trade, and they emphasize the conditions that underlie trade outcomes, ultimately culminating in the ubiquitous use of the global value chain framework.

Substantive differences in the composition of export and import bundles and competitiveness are argued to be driven by institutionally and historically rooted overlapping patterns of technological advantage, labor markets, and market structure. From this theoretical standpoint, we can understand how education gaps, political institutions, and social constructs such as gender and race are embedded in economic hierarchies. This school of thought about trade is in stark contrast to the more orthodox frame of comparative advantage. Contemporary notions of comparative advantage, in combination

with the Heckscher–Ohlin theorem and the Stolper–Samuelson theorem, posit that trade patterns are the result of the relative abundance of static and exogenously determined factors of production, and that these relative endowments are the primary drivers of relative prices. When countries specialize in the goods for which they have lower relative prices gains from trade arise, for both countries, due to consumers being able to access lower import prices. Further, as the specialization continues, the factor prices will equalize across trading partners and this, combined with exchange rate movements, will lead toward balanced trade. It is outside the scope of this paper to contend with all of the elements of the grand debate about how absolute advantage is more relevant to the understanding of contemporary trade patterns. That said, this view does provide a basis for analyzing how the historically rooted distribution of advantages and abilities (simplified to endowments) fosters trade patterns and capital flows that can perpetuate or interrupt this distribution. Further, the emphasis on cost-competition rather than relative prices puts the focus on the external and internal social conditions that allow firms to compete in terms of both price and innovation across borders.

Technology gap models represent an important departure from comparative advantage by pointing to persistent and significant differences in technology and innovation as primary drivers of trade composition and FDI flows. An early driver of work such as this includes [Vernon \(1966\)](#), which led to much literature on global production-sharing and its relationship to historically rooted technological differences. Structural models such as Vernon's identified high-income consumers and innovating rent-seekers in the North, and sub-contracted firms or FDI-driven low-cost price competitive production in the South. Other work in this area emphasized that the causes of the technology gaps are "complex social processes of innovation and diffusion" ([Milberg 1994b](#), p. 419), and that this type of endogenous technological change is likely to have a big impact on perpetuating competitiveness and trade patterns ([Fagerberg 1988](#); [Verspagen and Wakelin 1997](#)).

There has also been work that extends the general concept of technology gaps to thinking about unequal exchange and the social conditions that underlie trends in the terms of trade. With the Global South specializing in relatively low-technology, price-competitive, and low value-added goods, the gendered nature of labor markets and occupational segregation become relevant foundations for competitiveness as well as terms of trade outcomes predicted by the various incarnations of the Prebisch–Singer thesis ([Osterreich 2007](#); [Heintz 2006](#)).

Another relevant offshoot of the technology gap literature was an effort to consider the 'social gap' as a driver of trade competitiveness. In this case, the 'social gap' was considered as substantive differences in institutional arrangements that affect employment and labor market security in general ([Milberg and Houston 2005](#)). Although not directly addressing questions of gender and female workers, this work does represent a feminist approach to uncovering the direct aspects of well-being that are linked to trade flows.

The insights of the technology gap models, unequal exchange, and research into institutional foundations that affect absolute advantage have contributed to the widespread adoption of the framework of global value chains (GVC). Global value chains (GVC) are defined as interorganizational networks clustered around one commodity or product, which link households, firms, and states to one another within the world economy. These networks are socially constructed and locally integrated, underscoring the social embeddedness of the economic organization of market processes ([Gereffi and Korzeniewicz 1994](#)). Generally, the governance structure is conceptualized by one of two types: buyer-driven and producer-driven. Producer-driven chains are those in which the producers play a central role in coordinating the network. Buyer-driven chains are those in which large retailers, brand-name merchandisers, and trading companies play a central role in shaping decentralized production networks in a variety of exporting countries. Regardless of whether it is buyer-driven, producer-driven, or a combination, the motivation for global production sharing is usually cost reduction and enhanced flexibility.

Sayed and Balakrishnan (2004) argued that various motivations for fragmentation can lead to different potential employment outcomes. Outsourcing so as to capture productivity gains (via economies of scale, for example) could lead to wage improvement if the gains are passed along, even if the total costs go down. Alternatively, if the goal is to reduce costs solely through cheaper resources, this essentially guarantees that any productivity improvements are passed along via lower prices, not higher wages. This motivation for outsourcing is more likely when the production phase being outsourced is labor-intensive and low value-added. As a result, we are more likely to see female crowding at the low end of the chain, as the skill profile corresponds with women's real or imagined lower educational attainment levels or gender-based discrimination in labor markets.

Much of the research to come out of the GVC framework points to a connection between precarious work and global production strategies. Heintz's (2006) unequal exchange model combines insights from GVCs to demonstrate that when the push factors are at work, this constrains the ability of exporting firms to capture rents and raise wages. In contrast, the market power of the oligopolistic lead firm, which in the case of buyer-driven chains is derived from branding, will allow for both higher rents and potentially higher wages for northern workers. Barrientos (2008) and Heintz (2006) employed the GVC framework in a more conceptual manner to argue that the market dynamics of global production sharing drive the use of a vulnerable, often highly feminized, and insecure workforce, while simultaneously creating an opening for activist northern consumers to push for better corporate codes of conduct and fair trade schemes. This approach also emphasizes how social and market interaction between firms, consumers, and civil society at different stages along the chain can constrain the ability of these initiatives to work. The global value chain analytical frame is capacious enough to accommodate the very questions that feminist-heterodox scholars need to be looking at, and has indeed become the predominate tool for such work. That said, as is described below, we need more multi-dimensional analysis that can bring together seemingly disparate areas of concern.

In practice, it should be noted that in much of the trade literature, even in work that is attempting to capture the extent to which social institutions matter for trade patterns, the phrase "comparative advantage" is used synonymously with "export bundle". For example, in papers that are seeking to investigate interesting questions such as the role that gender inequality might play in fostering trade competitiveness, the phrase "comparative advantage" is often employed (for example, see Busse and Spielmann 2006). In addition, the concept of "revealed comparative advantage", which is measured by the Balassa index, is commonly used as merely an indicator of specialization, and it does not actually matter whether the root of the specialization is in relative prices or absolute price differences (Laursen 2015).

3. Segregation, Exports, and Informal Work

There has been considerable work from feminist economists that has concluded that this wave of globalization could be described with competitive or absolute advantage view of trade in which firms compete for export market share on the basis of unit costs and prefer women's labor because it's relatively cheaper owing to gendered labor markets. This analysis, rooted in the heterodox trade theories described above, links feminist interests in gender equity directly to the causes and effects of trade, and tracks back to the 1990s and early 2000s. Çağatay (2001) clearly articulated the relationship. Although gender inequity constrains women's ability to participate in the global economy in the same way that men can, and in this way reduces the potential for them to contribute to the macroeconomy in general, this wage-inequality can stimulate investment and higher export growth rates. By allowing for lower costs, this created a competitive advantage for semi-industrializing countries competing in price-sensitive global markets (for more work in this area, see Seguino 1997, 2000; Çağatay 2005; Elson et al. 2007; Busse and Spielmann 2006; Williams 2003). The effects of these arrangements have had uneven effects on the workers as well as the firms. For a variety of reasons related to gender-based occupational segregation, female labor force participation in the global industrial sector seemed associated with persistent gender wage gaps and low value-added and price-competitive

exporting firm competitiveness. As more countries from the Global South created female-intensive export-processing zones and engaged with more arms-length subcontracting that depended on women (Balakrishnan 2002; Sayeed and Balakrishnan 2004), other countries, upon reaching a ‘mature stage’ in manufactured exports, were already beginning to witness a reversal in these feminization trends (Shaiken 1993; Kim and Kim 1995; Mehra and Gammage 1999; Berik 2000).

The GVC framework discussed in the previous section has been regularly employed to evaluate specific goods within particular regional contexts, and how their production processes are integrally connected to social conditions as in Damodaran (2005) and Rammohan and Sundaresan (2003). Damodaran used field studies from Calcutta and Madra to consider the influence of state industrial policy on labor in small-scale leather-exporting firms. The authors argued that the state played a key role in purposely fostering a regulatory environment that kept local firms stuck in the low value-added portion of the commodity chain and kept workers vulnerable to exploitation. Rammohan and Sundaresan (2003) used the GVC to map the social linkages of production and distribution of coir yarn in Southern India when evaluating varied technological processes and gender and caste dynamics in Kerala. In addition, the GVC framework has been used to consider decent work outcomes related to GVC integration (see Goto 2011 and Osterreich 2013 as just two examples).

As can be seen by the way that social and historical conditions are considered part of the GVC, labor law, social insurance schemes, and gender norms likewise form the ubiquitous ‘informal’ labor markets that are also embedded in GVCs. Standing (2010) articulated that a precariat forms within the chains and actually redefines the informal versus formal labor market divide. In this context, various arguments that more social protection and the strict enforcement of labor laws will only push the poor into informal labor markets (because formal establishments will choose to not hire them) might ignore an informalization process that is increasingly associated with so-called ‘formal sector’ export-oriented employment (Kudva and Beneria 2005; Milberg 2004; Islam 2005; Warnecke and Ruyter 2012). Barrientos and Kabeer (2004); Heintz (2006); and Carr and Chen (2002, 2004) argued that the gender relations that are play in this trend both affect the share of women in precarious work environments as well as the degree to which women’s earnings can lead to real poverty alleviation for the many households that depend on this income stream.

Overall, policy recommendations that stem from the GVC analysis often argue for a strong state role in subsidizing and planning for technological innovation as well as fostering a broad-based educational environment that allows for skill development that would enhance the possibilities for upgrading. Humphrey and Schmitz (2002) articulated a framework for considering various types of upgrading, including (a) changing how a single good is produced, (b) producing similar but new goods with higher value added, (c) taking on more intermediate tasks within a chain, or (d) moving to an entirely different type of good with higher value added. In order to better link this type of upgrading to questions of well-being, Barrientos et al. (2011) and Milberg and Winkler (2011) have advanced the concept of social upgrading, and gender-based social upgrading in particular (Barrientos 2014). To some extent, the concept of social upgrading is inspired by the capabilities approach pioneered by Sen (2000) in that it attempts to capture the various aspects of well-being that we value, and then considers whether or how employment outcomes are linked to those well-being goals in both direct and indirect ways. For example, it does not assume that employment itself is a sufficient goal; rather, equitable work that is the result of enabled rights represents the full dimension of social upgrading. This approach has empirically and conceptually emphasized that social upgrading, and particularly gender-based social upgrading, is not in any way a logical outcome of economic upgrading.

More recent cross-country research concerning an apparent widespread pattern of industrial de-feminization for more countries (Kucera and Tejani 2014; Tejani and Milberg 2016; Saraçoğlu et al. 2018) has revived early questions concerning how long-lasting the employment effects of export-oriented work have been for women in the global assembly line. This scholarship is building off the work from the 1990s and early 2000s, which was mentioned previously, that found early signs of employment reversals for women in various individual countries. The research suggested that for many middle-income

countries, feminization appears to have been more closely linked with labor intensity rather than the export sector, and that industrial upgrading can then lead to a fall in the female labor force participation (for country-level analysis, see [Özay \(2015\)](#) or [Caraway \(2007\)](#)). It is argued that there are within-sector technological effects that are at work, as well as changes in the sectoral composition of industrial activity. There have been a few (as of yet not fully investigated) hypotheses that could explain this: (a) as firms move into less severe price competition, they are less concerned with finding the lowest labor cost, and do not need to resort to women due to their lower wages; (b) women may have been successful at demonstrating their lack of ‘docility’ ([Elson and Pearson 1981](#)), and increased organization and mobilization has reduced firm preference for women; (c) the conditions that originally coincided with more female labor, including low wages, increased reliance on flexible contracts, poor working conditions, etc. have just spread to men’s working environments, reducing the need to rely exclusively on women for such poor-quality jobs.

There are important research questions to ask about this possibility. For example, would these industries have developed in the Global South had they not had global value chains with which to integrate? Structural change due to increasing as well as increasingly technological import demand in the Global North surely drove the industrial path, which is to say that there would not have been the boom in labor-intensive manufacturing jobs without them being export-oriented. It is also the case that men have worked in manufacturing export sectors, facing different employment options both within those sectors and varied employment outcomes. For example, a case study of Indonesia demonstrated that women’s labor force participation in manufacturing was indeed driven both by labor intensity and export intensity ([Osterreich Forthcoming](#)). As men have more employment options available, including the same and different export sectors as well as non-export sectors within manufacturing and elsewhere, this would not be the same for them.

Regardless, it is clear that overall, the global labor markets have seen a decline in women’s share of formal employment in the industrial sector overall, despite substantial gains in education ([Seguino 2016](#)). This is also consistent with other work that has shown occupational segregation to be “incredibly pervasive” at the occupational and sectoral levels for the Global South ([Borrowman and Klasen 2015](#)). Both of these research projects demonstrated this to be the case despite considerable evidence that educational attainment has improved, and that gender-based educational gaps are falling. Ultimately, the gains that women may have experienced via increased employment, based on entry into the most price-competitive and low value-added export sectors of intermediate input or assembly tasks, have not lead to lasting changes in equity, empowerment, or mobility.

This trend is having a significant effect on (a) the types and quality of contracts that male and female workers in manufacturing have access to, as well as (b) our accounting of this work in the first place. Home-based work has long been a key component of women’s integration into global value chains. Contrary to the expectations of neoliberal policy makers, this trend has only grown in recent decades. The impact that this has on our understanding on the pressures that workers and firms face while integrating into or upgrading within a GVC is significant, and it is likely connected to concerns about de-feminization at the more formal level. Recent cross-country work centered on South Asia has suggested that home-based work is expanding from the traditional textiles and garments into electronics to automobile parts and pharmaceuticals. Further, this work continues to constitute a large share of women’s paid employment: roughly 30% for urban women in India and Pakistan ([Chen and Raveendran 2012](#); [Akhtar and Venek 2013](#)).

A related and increasingly pervasive trend is the development of the use of private employment agencies (sometimes referred to as ‘local outsourcing’) and substituting short-term contract (temporary/casual) employees for permanent employees. Manufacturing firms are increasingly turning to these strategies to manage erratic demand from global buyers. Used as a ‘pressure valve function’ ([International Labour Organization 2009](#)), temporary agency workers are rarely covered by labor law provisions and are unlikely to be counted in industry surveys as production workers at all, as they are not considered firm employees. The impact that these workers have on global supply

chain employment for countries in the Global South is unclear, but Indonesia serves as a concerning case study. Workers employed by staffing agencies are estimated to make up roughly 40% of the so-called formal work force (Juliawan 2010). According to Akatiga (2010), a large share of workers in the semi-conductor export sector are temporary workers or workers placed from agencies. The latter are not allowed to unionize, nor do they have access to firm or state-provided benefits—either from the client firms or the staffing agencies. Lastly, Global Unions (2010) suggested that women are overrepresented in staffing agency work worldwide, although the sector distribution of that work is unclear.

4. Recommendations for Moving Forward

Based on the above analysis of the existing literature, we can lay out some pathways for advancing the literature so as to make better connections across these strands of work. Multi-dimensional modeling and empirical work is needed to connect the trends in informality, de-feminization, and technological change. There are limited examples of more recent formal models that consider absolute advantage and gender in relation to manufactured exports in the context of de-feminization or industrial change. One so-called ‘eclectic and suggestive’ macro-level model put forth by Tejani and Milberg (2016) provides an integrated narrative of changes in gender wage gaps, technological change (as measured by the capital–labor ratio), changes in female labor force participation, and export growth. This model would suggest that an increase in industrial upgrading (via increased capital intensity) reduces the demand for female labor. Then, it is possible that this could bid down the women’s wages even further, leading to a rise in export growth, despite a fall in the growth of female labor force participation.

One pressing direction to take from this framework would be to use it to develop research questions at the country and industry level to better understand the particular linkages between persistent trends in occupational segregation, economics upgrading, and labor force participation that are relevant, given the particular set of gender-based realities. Barrientos (2014) argued that there is very limited work that actually seeks to unpack the gendered process of economic and social upgrading or downgrading. She argued that there can be mixed outcomes that vary across context and sector. Further, the various types of upgrading (described above) are likely to lead to various possibilities in terms of the broader spectrum of measurable gains/losses and enabling rights. Although some work of this nature has been done in certain areas, such as agri-food, call centers, and tourism (Barrientos 2014; Staritz and Reis 2013), there is little work on this in the manufacturing sector, and the work that does exist is not particularly gendered. In addition, any potential relationship between economic upgrading and skills should be carefully considered. It is not uncommon to make assumptions about women’s and men’s existing skills (or lack thereof) and occupational segregation with informal work as well. What constitutes the proper skills for various jobs is often culturally constructed based on existing sets of gendered norms and expectations about the jobs (Elson and Pearson 1981). A common example in textiles and apparel is in tanning and leather within the textiles and apparel industries. Kelkar and Yunxian (2007) found an existing law in parts of India that named these industries male-only. Considering the cross-country improvements in women’s educational attainment assumptions about whether women are skilled enough would be problematic.

Integrating these questions about gender, skills, and upgrading will also benefit from more careful connection to other research on informal and informal-like work conditions. Wicaksono and Priyadi (2016) and Osterreich (2018) evaluated decent work and industry dynamics in the Indonesian manufacturing sector. The research from Wicaksono and Priyadi (2016) concluded with the surprising finding of increased fragmentation with an increase in more informal own-account subcontracting across both highly skilled and lesser skilled employees. These employees (primarily men) are falling out of the production workers’ labor force data and moving into ‘self-employed’ data. A broader look at women in the Indonesian manufacturing labor force (Osterreich 2018) demonstrated that own-account work and unpaid work is growing as a share of overall work in manufacturing

sectors, with the traditional ‘employee status’ becoming less likely. This is a clear case for the need for a careful evaluation of our measurements of labor force participation, skills, and industrial change.

To echo the call for more feminist work in this area, we need more formal models that can provide more intuition to understanding the scenarios under which economic upgrading can lead to social upgrading. The relationship between occupational segregation, global value chain upgrading, and labor force participation depends in large part on the social conditions that underlie the segregation in the first place. For example, we could see minimal change in female labor force participation in connection with upgrading; however, this could come from dramatically different avenues. One possibility is that it could come from reduced occupational segregation via, for example, intensified anti-gender employment discrimination pressure from civil society. Alternatively, it could come from an increased use of casual (yet skilled) workers with weak contracts or via increased reliance on workers from staffing agencies. These last two options would lead to and result from very different social up/downgrading processes, and we would not see the expected effects on the wage gap or export growth (or rather the portion of export growth that is contingent on the wage gap). Both theoretical frames and more case study empirical work need to be done to untangle and reveal these possibilities.

Another path for future research is in the area of exploring the gender dimensions to the question of whether upgrading is actually happening in a way that is realized by the firms. For example, [Milberg and Winkler \(2011\)](#) evaluated the measurement of industrial upgrading, and found that in most cases, what seems on the outset to look like industrial upgrading (improved productivity, for example) results in reduced unit costs, which would not provide for increased rents that could be passed along to workers. This implies that for many developing countries, changes in capital intensity are not fostering conditions that allow the firms (and their workers) to move up along the governance ladder within their respective GVC. The productivity gains are passed along to buyers via lower prices, which is consistent with what some refer to as the Prebisch–Singer II hypothesis. This was based on the original Prebisch–Singer thesis, which argued that there was a downward trend in terms of trade for agriculture-exporting developing countries vis-à-vis their manufactured imports from the Global North. The modern version of this idea suggests that this trend persists even when the south is exporting manufactured goods, thus making the terms of trade trend an outcome of the institutional differences between countries. [Osterreich \(2007\)](#) demonstrated a relationship between gender–wage gaps and deterioration in the manufacturing terms of trade for countries in the Global South. More work could be done in this area to really unpack the kind and extent of the upgrading and to what extent its causes and outcomes are gender-related.

These various suggested paths for new work are all steps forward that are only made possible due to the considerable work that has been done already. From the existing work, which was primarily (although not exclusively) done in the late 1990s to the early 2000s, and the more recent scholarship, we can see disparate signals of increased quantities and types of precarious work in global manufacturing. In addition, we can see the fragility of the gains in economic mobility via manufacturing with only questionable improvements in equity or empowerment. It is clear that just getting women into the factories has not been enough for sustainable and equitable growth, and the recommendations described above could help open up our research and policy agendas to new ways of reaching those goals.

5. Conclusions

Women and men in rich, middle-income, and poor countries are facing the threat of increasingly precarious work arrangements. Some of this vulnerability is rooted in rapid and broad industrial and technological change that is happening across highly integrated and global economies. A considerable amount of work has been done to understand the ways that gender relations affect and reflect various dimensions of international trade in this current wave of globalization. Feminist–heterodox work in this area has focused on global value chains, processes of industrial change, and the impact that gendered-labor markets have on firm/industry competitiveness. There has also been work developing

frameworks for understanding the particular dimensions of well-being tied to decent work and social goals, whether they are measurable or not. This work has improved policy guidance that can help create equitable foundations to economic and social institutions, and would lead to better and more just trade-related outcomes. That said, there is considerable work to do.

To summarize, there are some deficits in the literature that would need to be addressed if we are to understand the current 21st century global manufacturing landscape. Ultimately, we need to better understand the multi-dimensional effects of persistent occupational gender segregation in the face of substantial industrial and technological change. As work contracts continue to deteriorate and global value chains continue to fragment, age-old patterns of labor market discrimination threaten gains in female labor force participation—both in terms of quantity of jobs and quality of work. The heterodox trade framework informs our understanding with its focus on industrial cost competitiveness, and we need to push the research agenda toward more analytical and empirical work to unpack the gender-differentiated impacts on empowerment and economic mobility.

The 2008 financial crisis ushered in dramatic changes to global value chains, including vertical or horizontal integration and consolidation, some of which came with increased attention to economic upgrading and new forms of arm-length subcontracting, as well as in-country subcontracting (Milberg and Winkler 2010). There is not much literature on this, but there is some research that suggests that there are significant gender-differentiated outcomes to these types of changes (Osterreich 2018). We need more research on more industries, in more countries, and with greater specificity in order to better understand the ongoing roles that gender relations and women play in trade competitiveness, especially during this most recent period of crisis and industrial change.

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