

## **Microfinance and the Care Economy**

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### **Abstract**

Microfinance has been advocated as a strategy for poverty alleviation and gender empowerment. However, the effectiveness of microfinance faces a structural constraint on the demand side from overall macroeconomic conditions, and on the supply side from the responsibility for unpaid care work borne by the female beneficiary of microfinance. We present a simple analytical model in the Post-Keynesian tradition to investigate the linkages between micro-finance, demand and unpaid care work by developing a two-sector model within the structuralist tradition.

**Keywords:** Microfinance, Care-work, Post-Keynesian macroeconomic model

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## 1. Introduction

Financialisation, through the past three decades, has implicated low income households in developed and developing economies in distinctive ways. In the context of the developed economies, the process of financialization has facilitated debt driven consumption led booms. The empirical evidence from the past three decades, particularly in the US, suggest that the process of financialisation bridged the growing hiatus between consumption demand and the stagnant real wages, and also drove profits through credit growth. In developing countries, where a significant share of production takes place in the informal economy and where the nature of employment is casual and uncertain, the process of financialization, and the growing encroachment of organized finance into working households, is being upheld as a way to extend access to credit and expand productive opportunities to households in rural areas

An important mechanism through which the process of financialization operates in the informal, rural economy in developing countries is through the promotion of microfinance. In the context of the rollback of the developmental state under the neoliberal policy regime, micro-credit schemes were initially promoted as a tool for gender-empowerment and poverty alleviation. The promotion of the ‘financial systems approach’ by the World Bank in the nineties, followed by the adoption of ‘financial inclusion’ as a developmental priority (and not simply a poverty alleviation strategy), most significantly after the Great Financial Crisis (World Bank, 2009), paved the way for the widening of the services offered from provision of microcredit to include a broader range of services, what can be termed microfinance (Robinson 2010). Microfinance was increasingly absorbed within the sphere of mainstream private finance (Bateman 2012, Bateman and Chang 2012, Taylor 2012, dos Santos and Kvangraven 2017). In place of the model of state and international donor subsidized microfinance, a model of market driven and profit oriented ‘commercial’ microfinance was espoused, internationally (Bateman and Chang 2012). With this development, the focus of microfinance shifted from indicators social performance to those monitoring financial performance, and microfinance became increasingly subject to the instabilities

that mainstream finance faces. Wagner and Winkler (2013) show that micro-finance institutions that tapped the domestic and international capital markets were also more vulnerable to crisis, experiencing a shrinkage in volume with the slowdown in credit. Since 2008 there have also been eruptions of micro-finance meltdowns triggered by excessive indebtedness and consequent defaults as profit-oriented microfinance has gained ground (Chen et al 2010, Hulme and Arun 2011).

While the implications of financialization have been investigated in the context of developed countries, there is a paucity of macroeconomic models incorporating the specific features of the growing importance of finance in developing economies. Even though the impact of micro-credit on both poverty and gender relations has been extensively studied (Banerjee et al 2015), the implications of the growth of micro-credit for the care-economy, and their repercussions in the wider macro-economy have received less analytical attention. This paper seeks to address this gap.

Unlike the use credit to finance consumption in the case of developed economies, micro-finance credit is meant to be used to fund self-employment or home production, in contexts where limited access to formal credit constrains the investment. Further the sustainability of debt depends on the relation between debt repayment and income generation. Income generation in turn is constrained by local demand conditions. The lack of clear evidence for transformative effects of microcredit for poverty reduction or improvement in standard of living (Marr 2012, Banerjee 2013, Banerjee et al 2015) suggest that the success of microenterprise is not related simply to credit availability but would also be affected by the macro-environment of demand that conditions the success and growth of micro-enterprises. Contrary to the vision microfinance does not open the door for limitless self-employment within the context of poverty (Bateman 2012)

The origins of microcredit are tied to the goal of enabling women in developing countries who face patriarchal or structural constraints on participating in formal employment to earn income through setting up micro-enterprises. The provision of small loans without the conventional collateral requirements is key to kick-starting the micro-enterprise. Since micro-finance schemes target women in particular, it also has

direct implications for unpaid care-work performed by women within the household. The increase in market labor implies a squeeze on the time of working women. In the absence of social provisioning of care, this squeeze on the labor time of women (as principal providers of unpaid care labor) could lead different possible outcomes. First if this leads to a decrease in time available for care, household income generation would be adversely affected by the erosion of the productivity of market-labour . Second there could be an increase in intensity of care labor, or an encroachment into leisure /surplus labor time available to women implying an increased burden of work . Third, the increased income from the market could be used to purchase goods and services that substitutes for care work or make it less time consuming (for example more efficient stoves) for care work or goods and services.

On the other hand, macroeconomic slowdowns would affect earnings in the sector through demand side effects. This would lead to an increase in unpaid care labor and/or a reduction in savings. The increase in care labor is in a sense a transformation of savings from a monetized to a non-monetized form (Stavaeren 2002). Unpaid care accommodates to shocks to earnings. This seems to be the case, particularly for low-income households in the developing countries with a large informal economy. Unpaid care labor also acts like a buffer during financial crisis (Singh and Zimmit 2000, Elson and Cagatay 2000). The leakage of microfinance loans to provide for consumption needs is a further complication.

The proposed paper will explore the linkages between micro-credit and unpaid care work by developing a two-sector model within the structuralist tradition as a first pass to addressing these questions. The objective is to uncover interlinkages between the informal sector based on micro-credit and the formal sector and highlight the implications of changing allocation to care work for the wider economy. Section 2 presents a brief overview of microfinance in developing countries with a specific focus on India. After clarifying our analytical framework in Section 3 we present a two-sector model in order to elucidate the relationship and interaction between the formal capitalist sector employing male workers and the informal, sector where female worker pursues self-employment opportunities through

access to micro-finance (section 4). The model investigates demand dynamics and the impact of an increase in interest rates on microfinance loans. Finally, we explore the interlinkage between care labor and productivity in Section 5.

## **2. An overview of microfinance**

Microfinance involves the provision of small loans to low income individuals to start a small-businesses or micro-enterprises. It has been seen as a way to help low-income households raise their standard of living. The limited access to formal credit was seen as a critical constraint to low income households. More specifically microfinance was launched as a way to target women in rural areas who were constrained, both by limited property rights and access to collateral in the credit market, and by norms that limited their capacity to participate in rural labor markets. Small loans that enabled women to start their own small enterprises, and be self-employed was seen as a significant step in both the empowerment of women and the alleviation of poverty. The micro-enterprises were typically closely related to agriculture and included activities like cattle and poultry rearing, food processing, tailoring, and petty trade. The system of peer-monitoring (and joint liability) substituted for collateral as a mechanism for enforcing debt repayment. While the interest rates did not compare favorably with formal credit institutions, they were significantly lower than that of the informal money lenders who dominated rural economy. In the past few decades market and profit oriented financial institutions have entered the sphere of microfinance and have transformed the landscape of microfinance and undermined its original social mission. Part of the impetus has been to establish microfinance on a secure and sustainable footing. At the same time this development has opened new opportunities for finance. The aggressive marketing of microfinance has led to households taking on multiple loans and higher rates of interest and falling inevitably into a debt trap. This has led to some debate on the need to regulate microfinance, and reassert its social mission. (Hulme and Maitrot 2014)

In the context of India, microfinance was actively promoted through the self-help group (SHG)-bank linkage program in 1992. Commercial banks partnered with non-governmental organizations to

form self-help groups of women in rural areas as a channel for microfinance loans. Microfinance Institutions which were non-bank financial institutions entered the field, growing rapidly after 2003, and began to transform the sphere of microfinance. While the former channel had its roots in the vision of addressing poverty by transforming rural women into mini entrepreneurs and was embedded in a vision of inclusive development agenda, the latter channel were profit oriented and had entered the fray as a new avenue for earnings. This period also saw technological innovations including securitization and structured products into this sector (Nair 2010, Sriram). The original social mission of microfinance was increasingly sidelined and the aggressive peddling of microloans triggered excessive debt. The spate of suicides among indebted farmers in Andhra Pradesh in 2010 led to a demand for greater regulation along with the recognition that microfinance is not immune to the volatile logic of finance (Hulme and Arun 2011). Since the mandate of microfinance is to targets low-income households, the impact of this volatility is borne by households least equipped to deal with the consequences.

The point of departure for this paper is the predominantly female beneficiary of microfinance loans. In the context of limited opportunities for formal employment in the rural economy in developing countries, and the burden of subsistence and care work, and patriarchal norms that constrains the choices faced by the rural women micro-credit provides an opportunity for gainful self-employment and income generation through these household-based enterprises.

However, the household is also the principal site for provisioning of care labor – the labor that ensures the social reproduction of the workforce. A disproportionate burden of care work falls on women and is provided outside market relations. Community ties can be an important source of social provisioning of care labor in rural economies but state investment in social care infrastructure in rural areas in many developing countries is limited and has suffered as consequence of the structural reforms that enforced a cutback in state spending. Thus, the major burden of care falls on the unpaid labor of women.

While studies have looked at the impact of micro-finance of incomes and socio-economic indicators of well-being and empowerment of women, there has been less focus on the implication for the gendered nature of the provision of unpaid care. The female worker when seeking self-employment through micro-finance also faces the choice of using the earnings to substitute unpaid care with market substitutes. Market goods can also be used to alleviate the burden of unpaid care work by enabling more effective use of care labor. At the same time, when market care goods and services are expensive in relation to the income earned, the female worker faces a constraint on the extent to which paid employment is traded off with unpaid care. In such a situation, paid employment imposes a double shift and entails an encroachment on the slack time available for the worker herself ( whether for leisure, self-care or rest). Evaluations of micro-credit have not provided much evidence to suggest an increase in consumption following access to micro-finance (Banerjee 2013, Banerjee et al 2015a, Banerjee et al 2015b).

In the face of cutbacks to state provision of care and the turn to financial inclusion as the overarching development strategy the implications of micro-finance on the decision about allocation of labor time to unpaid care work become crucial. If earnings generated are inadequate to sustain an increased recourse to market care goods and service or more effective care labor, the increased burden on the female workers labor time would have an impact on labor productivity either because there is a reduction in amount of time devoted and the quality of care work, or because of the effect of the reduction in slack or surplus time exacts a toll on female care work provider's productivity. The scale of earnings from this sector are thus crucial. In the context of the low-income households in rural areas in developing countries the scale of earnings generated and the amount of slack-time available to women in households where survival strategies depends on unpaid care and subsistence work is likely to be limited.

The evidence of studies evaluating the impact of microfinance, do not support any conclusions about improved standards of living as an outcome of micro-finance. Even though studies point to an increase in business activity (and thus self-employment opportunities), they are less conclusive about the

transformative potential of micro-finance on the borrower (Banerjee et al 2015a, b). The micro-focus of these studies misses an important a dimension of what would allow micro-finance to pave the way to better and more sustainable earnings opportunities. While the importance of decent infrastructure (including for marketing products) for the success of micro-enterprises has been underscored (Marr 2012), there has been a relative neglect of demand side factors. Since the enterprises are small in scale and there is typically a replication of products and services among small enterprises in a particular region, so that prices and earnings tend to get squeezed due to competitive pressures. The earnings of self-employed micro-entrepreneurs depends on the growth of the demand for their products. This would depend on strong linkages outside the local rural economy. The structural constraints on the income generating potential of micro-finance thus arises on the supply-side from the inadequacy of infrastructure and social spending, on one hand and the limits posed by the responsibility of provision of care labor on the other. At the same time demand also poses a structural constraint on potential of micro-finance.

The analytical model presented in this paper seeks to explore some of these issues.

### **3. The analytical framework**

The analytical model presented here is within the heterodox/ post-keynesian tradition. Foley & Taylor (2006, p 77) identify the core features that unify heterodox perspectives as “a focus on the functional distribution of income; the avoidance of model closures that are imply full employment of a given labor force; differential modeling of the consumption and savings decisions workers and capitalists; the adoption of an investment demand function independent savings decisions; and a separate treatment of the firm as an economic agent independent of its owner households.”

Elson and Cagatay (2000) emphasize the gender-inequitable biases that are implicit in mainstream macroeconomic approaches, particularly in the context of economies dominated by financial interests<sup>1</sup>. The Post-Keynesian approach is with its focus on interconnection between demand and

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<sup>1</sup> These are the deflationary bias, the breadwinner bias and the commodification bias. The emphasis on austerity depresses wages and employment at the same time that the state is cutting back on social spending and privatizing

distribution is our point of departure. However, the social and distributional consequences of macroeconomic outcomes and policies go beyond wage and profit shares that are at the core of Post-Keynesian analysis. The interaction of the forms social and non-market provision of care on demand and distribution dynamics bears further investigation.

Theoretical advances have been made in embedding care-work within the broad Post-Keynesian macro-economic framework (Akram-Lodhi and Hanmer 2001, Ertürk, K. and Çagatay 1995, Çagatay and K. Ertürk. 2004. van Staveren 2010, Braunstein et al 2011, Seguino 2013, Braunstein 2013). However, there is a critical gap in the literature with respect to the development of a theoretical modeling framework to understand the implications of the growing involvement of households in relations of debt for the social reproduction of labor. Structuralist macroeconomic models have investigated the implications of finance for macro-dynamics (Hein and Van Treek 2008, Onaran et al 2009, Hein 2012, Hein 2012, Bhaduri et al 2013, Bhaduri and Raghavendra 2017, Vasudevan 2017). In particular, the impact of growing consumer debt on growth, distribution and stability has been studied (Dutt 2005, 2006, Hein 2012, Setterfield and Kim 2013,). There is of course a gender dimension to financialization and the growth of household debt. Floro and Dymski (2000), for instance present a micro-foundational model of unequal power and cost-sharing to investigate the asymmetric impact of financial crisis on gender relations within the household in emerging markets that integrate into the global financial system. Singh and Zammit (2000) Aslanbeigui and Summerfield (2000) Van Staveren (2001, 2002) are among the early attempts to address the gendered impact of global financial flows and financial crisis. The investigation of the impacts of financial crisis suggests that the financial burden of excessive financial risk-taking is also shifted to those (mainly women) who provide unpaid care.

Finance undoubtedly accentuates vulnerability of households but of equal significance is the impact on the provision of care-work. The adjustment to financial shocks takes place through an increased

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health education and other social sectors. The household care economy bears the brunt of this, and women are forced to take on a relatively larger burden of unpaid care work in order to compensate for the deteriorating livelihoods of low income households.

dependence on unpaid care work. Further, the insertion of households into relations of debt, also has implications for the social reproduction of labor. The channels through which finance affects the distribution of paid and unpaid care-work, and how this in turn feeds back to effective demand and macroeconomic performance, have been inadequately theorized. The household is the site where decisions about consumption and allocation of labor are made. In this paper we do not focus on the micro-level decision making but are more interested in investigating macroeconomic outcomes.

The conception of finance within the heterodox Post-Keynesian macroeconomic framework is relevant to investigating the economic implications of micro-finance, and serves as the point of departure for the model presented here. Note, that while the model in this paper addresses the question of aggregate demand, it should be seen as macro-model of a closed local economy.

In order to focus more sharply on the key analytical relationships that are of interest for our purpose we elaborate a stylized two sector model in the tradition of Post-Keynesian dual models with specific features<sup>2</sup>. The first sector is the formal sector and is modeled on the lines of the conventional Kaleckian model with two classes: capitalist and workers. The other sector is an informal sector and comprises small enterprises that develop on the basis of micro-finance. These enterprises are generally small in scale and predominantly consumption goods (like production and sale of garments or food products). This sector is constituted by self-employed worker/producers. The two-sector formulation allows the investigation of demand dynamics on micro-financed self-employment.

We further assume that the worker in the formal sector is male while the self-employed worker in the informal sector is female. Microfinance allows the female worker the opportunity for earning by setting up a micro-enterprise. She is faced with the choice of allocating her labor between paid self-employment and unpaid care labor. Care labor poses in some sense a structural constraint on the capacity for paid employment. It is also a critical determinant of labor productivity in general. Further the viability of the

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<sup>2</sup> Rada (2007) for instance develops a dual model with a modern and subsistence sector incorporating Kaldor-Verdoon channels of productivity growth and retardation mechanisms.

micro-enterprise depends on demand conditions in both sectors. We make the simplifying assumption that the goods produced in this sector are consumption goods consumed solely by male and female workers. Increase wage earnings in the formal sector lead to a greater demand for the informal sector output. Higher earnings in the informal sector would also stimulate demand for this sectors output.

Thus the two sectors have a mutual feedback effect on each other and the growth in one sector can stimulate demand for the product of the other sector suggesting the possibility of a benign upward trajectory in income level. The other link between the two sectors is on the supply-side. The informal sector is constituted by female workers who allocate their labor between self -employment and care labor. The opportunity for earnings through micro-finance could have an impact on how care is provided. If the scale of earnings is not enough to lead to an increased recourse to market substitutes ( and complements) there will be an erosion of care provision. This would affect labor productivity in both sectors. Both these channels are explored in this paper.

We assume the quantum of microfinance to be exogenously given. Thus, the model as it is formulated does not explicitly address financial dynamics. It does however allow us to investigate both demand dynamics and the relation between care-work and labor productivity and more specifically the impact of an increase in the interest rate on these interlinkages.

#### **4. Modelling the two - sector economy**

The economy is divided into a formal capitalist sector employing male workers and an informal sector constituted of female workers who allocate their time between unpaid care work and self-employment. We use the subscripts  $fc$  and  $is$  for the formal capitalist and the informal self-employed sector respectively. Self-employment is kickstarted by access to microfinance. We assume that labor productivity is the same in both sectors. However, given the small enterprises that micro-finance helps establish, cannot achieve economies of scale, labor productivity in the informal sector is likely to be lower than that of the formal sector. We do not construct micro-level behavioral models of the allocation of labor between unpaid care work and employment and paid work, or of consumption between formal and

informal sector output. However, the parameters defining allocative shares reflect these micro-level decisions.

#### 4.1 The dual sectors

The formal capitalist sector is modeled in terms of the standard Kaleckian framework with two classes: capitalists and workers. We assume that only male workers have access to formal employment. The value added in this sector is distributed between the two classes in in form wages  $W_{fc}$  and profits ( $\Pi$ )

$$Y_{fc} = W_{fc} + \Pi \quad (1)$$

The profit of the capitalist in the formal sector is:  $\Pi_{fc} = \pi Y_{fc}$

where  $\pi$  = profit share.

The wage income of the (male) worker  $W_{fc}$ , is:

$$W_{fc} = wl_{fc} = w \frac{Y_{fc}}{\lambda} = (1 - \pi)Y_{fc} \quad (2)$$

Where  $w$  the wage,  $\lambda$  = labor productivity in the formal sector and  $l_{fc}$  is the labor employed.

The informal sector, on the other hand, does not comprise capitalists and workers but the self-employed (female) worker. We make the restrictive assumption that the female worker does not enter the formal labor market. This reflects the greater barriers to formal employment faced by women in these economies and the adoption of microfinance as a way of addressing these barriers by providing earning opportunities.

Earnings in the informal sector,

$$E_{is} = p_{is}Y_{is} - iB \quad (3)$$

where  $B$  is microfinance borrowings, and  $i$  the interest rate.

#### 4.2. Demand for formal and informal sector output

The demand adjustment dynamics are modelled in a distinct way for each of these sectors. Demand adjustment in the formal capitalist sector is modelled in the standard post-keynesian way as output adjusting to excess demand. In the informal sector, in contrast we assume price adjusts to excess demand.

In order to determine aggregate demand in the economy we make certain simplifying assumptions.

1. The male worker employed in the formal sector consumes  $b$  of the formal sector good and  $(1-b)$  of the informal sector good. Further the male worker does not save. Thus the male worker demand for the formal sector output is  $bW_{fc}$ , and that for informal sector output,  $(1-b)W_{fc}$ .
2. The female worker in the informal sector saves  $s_f$  of her earnings. Of the remainder  $a$  is spent on the formal sector output and  $(1-a)$  on informal sector output. The female worker spends  $a(1-s_{is})E_{is}$  on formal sector output and  $(1-a)(1-s_{is})E_{is}$  on informal sector output.
3. The capitalist saves  $s_\pi$  share of the profits and spends the rest ( $S_K = (1-s_\pi)I$ ) on formal sector output.

The assumption that the male worker does not save is a carry-over from the original Kaleckian model and is not crucial to the analysis. The savings behavior of the female worker, however, is of greater significance to the central concerns of the present paper.

The extent to which the self-employed female worker bears the responsibility for providing care work affects the amount that she saves. This responsibility could be shared within the household, the wider community or provided by the state. But where the responsibility rests primarily on the female worker she would fall into a low-income low savings trap. The low-income makes it impossible to save, and limits the extent to which market can substitute or complement care labor. Conversely, low savings make it hard to improve earnings either by spending more time or productivity enhancing investments. In practice, at low levels of earnings, and the compulsion of debt repayment, savings are likely to be low or

negligible. This would imply that the growth of the informal enterprise would depend on new loans. The constraint on savings is reflected in the empirical findings of the lack of investment growth in this sector<sup>3</sup>.

The literature on the gendered pattern of consumption suggests that male workers are likely to spend a larger share of their income on capital intensive and luxury goods which are produced in the formal sector. Therefore  $b > a$

The investment goods demanded by both sectors are also produced in the formal sector. Investment demand (real) in the formal sector is given by:

$$I_{fc} = \alpha + \beta Y_{fc} + \gamma \pi \quad (4)$$

This is the conventional Kaleckian investment demand function where  $\alpha$  represents animal spirits, and investment responds to capacity output and the profit share.

Investment demand (real) in the informal sector on the other hand is given by:

$$I_{is} = s_{is}[p_{is}Y_{is} - iB] = s_{is}[p_{is}\lambda_{is}l_{is} - iB] \quad (5)$$

Where  $s_{is}$  is the savings rate out of net earnings. Investment in this sector is governed by a classical model. The initial investment is determined by the quantum of microfinance. Subsequently, the entire savings (after repayment of loan) are reinvested. We do not explicitly consider the term of the loan in the present analysis, which is looking at short run impacts.

The determinants of  $s_{is}$  are not explored in this paper, but this variable is crucial to the adjustments made by the female worker, in the context where the female worker is the principal provider

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<sup>3</sup> There is evidence in developing countries, that as women's discretionary income and bargaining power increase, aggregate saving rates rise, implying a significant effect of gender on aggregate savings (Seguino and Floro 2013). There are however contradictory impacts of a rise in female earnings on savings. On the one hand the greater responsibility for providing care might result in lower savings for instance due to due to greater investment in education of children. On the other hand, women may be motivated to save in order to better provide for the security of the family. Relative bargaining power within the household and control over earnings would also affect women's savings behavior (including the forms in which savings are undertaken). The present model does not address this particular issue.

of unpaid care labor. Increased earnings allow the substitution of unpaid care labor with market goods and services. Thus, increased employment need not involve a diminution of the provision of ‘care’, but rather its transformation from a non-market to a market form. However, at the margin, there is a trade-off between earnings and the cost of market substitutes as the worker chooses between market and non-market forms of production and savings (van Staveren 2002). It has also been argued that micro-finance is a mechanism for saving, where the large one time spending enabled by micro-credit is then paid back by restricting consumption (Banerjee 2013).

We can determine aggregate demand for each sector. The total (real) demand for the formal capitalist sector output is:

$$D_{fc} = \{a(1 - s_{is})[p_{is}Y_{is} - iB] + s_{is} [p_{is}Y_{is} - ib] + b(1 - \pi)p_{fc}Y_{fc} + (1 - s_{\pi})\pi p_{fc}Y_{fc} + p_{fc}(\alpha + \beta Y_{fc} + \gamma\pi)\}/p_{fc} \quad (6)$$

The first term represents consumption demand of the self-employed worker, the second term the investment demand in the informal sector, the third and fourth terms the consumption demand of the formal sector worker and capitalist respectively and the last term investment demand in the informal sector.

The total demand for informal sector output is given by:

$$D_{is} = \{(1 - a)(1 - s_{is})[p_{is}Y_{is} - iB] + (1 - b)(1 - \pi)p_{fc}Y_{fc}\}/p_{is} \quad (7)$$

The first term is consumption demand of the self-employed workers and the second that of the formal sector worker. We now turn to investigating demand dynamics.

#### **4.4 Demand Dynamics:**

The dynamics of adjustment to disequilibrium in demand is distinct in the two sectors.

In the formal sector output adjusts to excess demand, in manner of the standard Post-Keynesian model, so that:

$$\dot{Y}_{fc} = D_{fc} - Y_{fc} = 0$$

$$\begin{aligned} \Rightarrow \dot{Y}_{fc} &= a(1 - s_{is})[p_{is}Y_{is} - iB] + s_{is}[p_{is}Y_{is} - iB] + b(1 - \pi)p_{fc}Y_{fc} + (1 - s_{\pi})\pi p_{fc}Y_{fc} \\ &\quad + (\alpha + \beta Y_{fc} + \gamma\pi)p_{fc} - p_{fc}Y_{fc} = 0 \end{aligned}$$

$$\begin{aligned} \Rightarrow \dot{Y}_{fc} &= [a(1 - s_{is}) + s_{is}][p_{is}Y_{is} - iB] - [1 - b(1 - \pi) - (1 - s_{\pi})\pi - \beta]p_{fc}Y_{fc} + \gamma p_{fc}\pi + \alpha p_{fc} = \\ &0 \quad (8) \end{aligned}$$

For the Keynesian stability condition to hold

$$\frac{d\dot{Y}_{fc}}{dY_{fc}} < 0$$

This implies that

$$[1 - (1 - \pi)b - (1 - s_{\pi})\pi - \beta] > 0$$

This condition implies that the demand gap (ie the demand for the formal sector output that is not satisfied within the sector) for the formal sector output is positively related formal sector output. ( See Appendix I).

In the informal sector in contrast price adjusts to excess demand such that:

$$\dot{p}_{is} = D_{is} - Y_{is} = 0$$

$$\begin{aligned} \Leftrightarrow \dot{p}_{is} &= (1 - a)(1 - s_{is})[p_{is}Y_{is} - iB] + (1 - b)(1 - \pi)p_{fc}Y_{fc} - p_{is}Y_{is} \\ &= [(1 - a)(1 - s_{is}) - 1][p_{is}Y_{is}] - [(1 - a)(1 - s_{is})iB] + (1 - b)(1 - \pi)p_{fc}Y_{fc} = 0 \quad (9) \end{aligned}$$

$$\frac{d\dot{p}_{is}}{dp_{is}} < 0$$

since  $[(1 - a)(1 - s_{is}) - 1] < 0$  as long as  $a < 1, s_{is} < 1$ .

We now have a dynamical system in  $\dot{Y}_{fc}$  and  $\dot{P}_{is}$  (see Figure1)

The nullcline (where  $\dot{Y}_{fc} = 0$ ) for formal sector demand in the  $Y_{fc}, p_{is}$  space, is given by

$$Y_{fc}(p_{is}) = \frac{[a(1-s_{is})+s_{is}][p_{is}Y_{is}-iB]+(\gamma\pi+\alpha)p_{fc}}{[1-b(1-\pi)-(1-s_{\pi})\pi-\beta]p_{fc}} \quad (10)$$

$$\Rightarrow \frac{dY_{fc}}{dp_{is}} = \frac{[a(1-s_{is})+s_{is}]Y_{is}}{[1-b(1-\pi)-(1-s_{\pi})\pi-\beta]p_{fc}}$$

The slope of the formal sector nullcline is thus:

$$\frac{dY_{fc}}{dp_{is}} > 0 \text{ iff } [1 - (1 - \pi)b - (1 - s_{\pi})\pi - \beta] > 0$$

The nullcline is therefore upward sloping if the condition for Keynesian stability holds. An increase in the price of the informal sector good requires a higher level of formal sector output for the market to be in equilibrium.

Further,

$$\Rightarrow \frac{dY_{fc}}{dY_{is}} = \frac{[a(1-s_{is})+s_{is}]p_{is}}{[1-b(1-\pi)-(1-s_{\pi})\pi-\beta]p_{fc}} > 0$$

if the Keynesian stability condition holds. An increase in the informal sector output shifts the nullcline

The nullcline for the informal sector (where  $\dot{p}_{is} = 0$ ), in the  $Y_{fc}, p_{is}$  space, is given by:

$$p_{is}(Y_{fc}) = \frac{[(1-a)(1-s_{is})iB]-(1-b)(1-\pi)p_{fc}Y_{fc}}{[(1-a)(1-s_{is})-1]Y_{is}} \quad (12)$$

The slope of the nullcline is

$$\frac{dp_{is}}{dY_{fc}} = \frac{(1-b)(1-\pi)p_{fc}}{[a(1-s_{is})+s_{is}]Y_{is}} > 0$$

Thus, a higher level of formal sector output implies that a higher price equilibrates the informal sector since demand has risen.

Note also that

$$\frac{dp_{is}}{dY_{is}} = \frac{[(1-a)(1-s_{is})iB] - (1-b)(1-\pi)p_{fc}Y_{fc}}{[1-(1-a)(1-s_{is})]Y_{is}^2}$$

The denominator is positive so

$$\frac{dp_{is}}{dY_{is}} \leq 0 \text{ if } [(1-a)(1-s_{is})iB] \leq (1-b)(1-\pi)p_{fc}Y_{fc} \quad (13)$$

The RHS represents the male workers consumption of the informal sector output while the LHS is the leakage in the female workers consumption demand for the informal sector output on account of interest payments.

Consider the equilibrium condition  $\dot{p}_{is} = 0$  (Equation 9). This implies that

$$[(1-a)(1-s_{is})iB - (1-b)(1-\pi)p_{fc}Y_{fc}] < 0 \text{ since}$$

$$[(1-a)(1-s_{is}) - 1][p_{is}Y_{is}] < 0$$

This implies that equilibrium is not possible in a situation where the demand leakage due to interest payment exceeds the informal sector workers demand. Therefore, demand equilibrium is only possible if

$$\frac{dp_{is}}{dY_{is}} < 0.$$

An increase in the informal sector output, will thus lead to a shortfall in demand and a fall in the informal sector price level. The nullcline will shift down.

The jacobian of the dynamical system at the steady state  $(\bar{Y}_{fc}, \bar{p}_{is})$ , can be represented as follows:

$$\left[ \begin{array}{cc} -[1 - b(1 - \pi) - (1 - s_{\pi})\pi - \beta]\bar{p}_{fc} & [a(1 - s_{is}) + s_{is}]\bar{Y}_{is} \\ (1 - b)(1 - \pi)\bar{p}_{fc} & -[a(1 - s_{is}) + s_{is}]\bar{Y}_{is} \end{array} \right]$$

The trace of the Jacobian is negative as long as  $[1 - b(1 - \pi) - (1 - s_\pi)\pi - \beta] > 0$ . This is the condition for Keynesian stability.

Turning to the sign of determinant of Jacobian, D:

$$D \leq [1 - b(1 - \pi) - (1 - s_\pi)\pi - \beta] - [(1 - \pi)(1 - b)] = s_\pi\pi - \beta \leq 0$$

Thus the system is stable ( $D > 0$ ) if the savings of the capitalist increase more than investment in response to an increase in formal sector income. This condition also implies that the formal sector

nullcline is steeper than that of the informal sector (ie  $\left. \frac{dp_{is}}{dY_{fc}} \right|_{fc} = \left. \frac{1}{\frac{dY_{fc}}{dp_{is}}} \right|_{fc} > \left. \frac{dp_{is}}{dY_{fc}} \right|_{is}$ ).

Thus, the stability condition boils down to the condition that the responsiveness of demand in the informal sector to the formal sector demand is greater than the responsiveness of the formal sector demand to the informal sector demand. Another way of stating this is that elasticity of the informal sector price to formal sector output, is greater than that of the formal sector output to informal sector price.

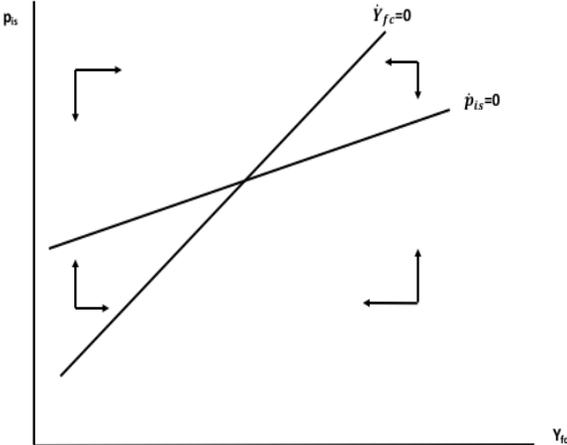
When  $D < 0$ , the system will display saddle-path dynamics, which in the absence a forward-looking jump variable suggests unstable dynamics. The condition for stability this depends on the relative slopes of the two null-clines and key to this is the behavior of the formal sector capitalist<sup>4</sup>.

Figure 1 presents the phase diagram for the adjustment dynamics for both cases.

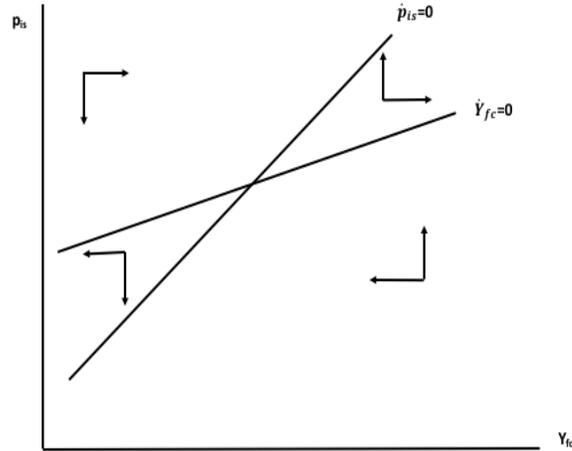
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<sup>4</sup> The condition basically implies that savings by the capitalist increases more than investment by the capitalist with a unit change in output, ie  $\frac{dS_K}{dY_{fc}} > \frac{dI_K}{dY_{fc}}$ . ( where  $I_K=I_{fc}$  ).

Figure 1: Demand Dynamics: Formal and Informal Sector



a. Stable case



b. Unstable case

We can now explore comparative static effects of changes in various parameters of the macroeconomic outcome. In the next sub-section we focus on the impact of changes in the interest rate since this is of crucial importance to the debt repayment capacity of the borrowers in the informal sector.

#### 4.5 Impact of an increase in interest rate

Increasing debt burden due to rising and multiple interest payment claims has been an issue with the provision of microfinance. The model allows us to investigate the impact of the rise in interest rates on.

Figure 2 represents the analysis for the stable case. Now

$$\frac{dp_{is}}{di} = \frac{[(1-a)(1-s_{is})B]}{[(1-a)(1-s_{is})-1]Y_{is}} < 0$$

Thus an increase in the interest rate shifts the informal sector nullcline downwards, lowering  $p_{is}$ .

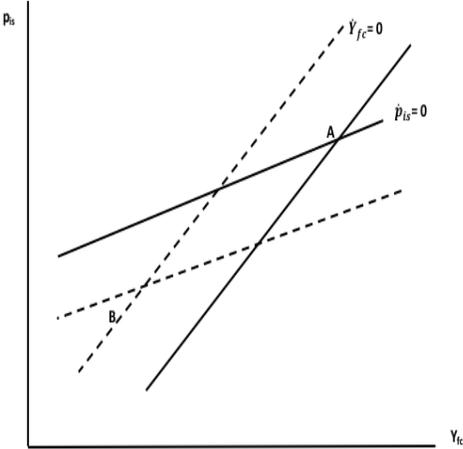
An increase in  $B$  also has an impact on the formal sector nullcline.

$$\frac{dY_{fc}}{di} = \frac{-[a(1-s_{is})+s_{is}]B}{[1-b(1-\pi)-(1-s_{\pi})\pi-\beta]p_{fc}} < 0$$

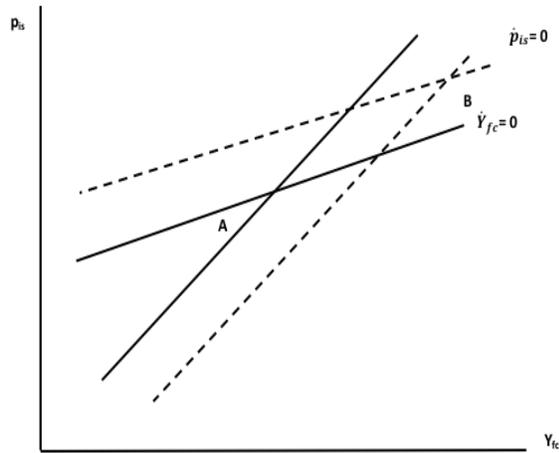
The increase in interest rates and the consequent leakage of demand to interest payments will lead to a fall in the formal sector equilibrium output. The formal sector nullcline will shift leftwards.

At the new equilibrium (a point like B, in Figure 2a),  $p_{is}$  (and therefore informal sector earnings) will fall. At the same time the shift in the formal sector nullcline implies that  $Y_{fc}$  will fall. Thus, usurious rates in the microfinance sector have an overall negative impact on income and earnings in both sectors. This conclusion is of significance in the context of the recent promotion of for profit microfinance as a development strategy. A case can be made that subsidizing interest rates in the microfinance sector would have a positive impact on income and earnings when the demand dynamics are stable. If demand dynamics are unstable then we have a new (unstable) equilibrium where informal sector price and earnings and formal sector output rises (Figure 2b)

**Figure 2: Impact of an increase in interest rate**



a. Stable case



b. Unstable case

### 5. Care Work and Labor Productivity:

The female worker in informal sector is also the principal provider of care. Care work is crucial for the reproduction of labor, and the allocation of female labor time between paid self-employment and unpaid care work has a central role in macroeconomic outcomes. In this section we present a model to facilitate a preliminary exploration of these outcomes

We assume a gendered division of labor where care work is provided solely by female workers. The female worker allocates her time between market-oriented informal self-employment ( $l_{is}$ ), unpaid care work ( $l_{cw}$ ) and what might be characterized as ‘surplus’ time ( $l_s$ ). Care work includes both the care work involved in reproducing male and female work, but also the labor involved in care for children and the elderly. While the unpaid work includes subsistence production for household consumption, we will incorporate this kind of unpaid labor within the unpaid care labor since it contributes to the material needs of social reproduction of labor. The time left after paid and unpaid work has been performed is the potential surplus or leisure time. Surplus time includes time that could be spent on a leisure activity, rest or some form of self-care. It is the time that the female worker can claim as her own. This surplus has a degree of elasticity. The curtailment of the surplus time for the performance of unpaid care

work, as female workers increase their participation in paid employment, is a significant dimension of how microfinance can exacerbate the pressure on the labor-time of the self-employed worker.

The allocation of a quantum of labor,  $l_f$ , between care work,  $l_{cw}$ , and self-employment,  $l_{is}$  is an outcome of a complex process of decision making that reflects both intra-household bargaining processes and social norms. We abstract from the actual decision-making process and focus on the outcome of this decision making process. Now

$$l_f = l_{cw} + l_{is} + l_s$$

Thus we assume a fixed supply of female labor. This simplification is adopted in order to highlight that increased self-employment involves a trade-off. We further postulate that

$$l_{cw} = \theta l_f$$

$$l_s = \phi l_f$$

Where

$$0 < \theta < 1, 0 < \phi < 1$$

The behavioural parameters  $\theta$ , and  $\phi$ , which are the aggregate share of female labor time ( $l_f$ ) allocated to unpaid care work and surplus labor time respectively, capture the choice between spending time on earning through self-employment in the informal sector, care work for reproducing, and surplus labor. So that

$$l_{is} = (1 - \theta - \phi) l_f$$

More generally, while the linear formulation above is a simplification, it reflects the trade-off between unpaid care work, surplus labor time, and paid work. While it is important to recognize that both paid and unpaid labor could increase at the expense of surplus labor time or leisure, there is a limit to the elasticity of this surplus time.

Labor productivity in the informal sector,  $\lambda_{is}$  is lower than that in the formal sector  $\lambda$ , in large part because the small scale of the micro-enterprises pre-empts any benefits from economies of scale. We could postulate that

$$\lambda_{is} = \zeta\lambda$$

Where the parameter  $\zeta$  is ratio of productivity in the informal sector to that in the formal sector. The parameter would be governed by the technological differences between the two sectors and also by the social norms that shape the gendered evolution of labor productivity.

We can now represent the demand nullclines as

$$Y_{fc}(p_{is}) = \frac{[a(1 - s_{is}) + s_{is}][p_{is}(1 - \theta - \phi)\zeta\lambda l_f - iB] + (\gamma\pi + \alpha)p_{fc}}{[1 - b(1 - \pi) - (1 - s_{\pi})\pi - \beta]p_{fc}}$$

$$p_{is}(Y_{fc}) = \frac{[(1 - a)(1 - s_{is})iB] - (1 - b)(1 - \pi)p_{fc}\lambda l_f}{[(1 - a)(1 - s_{is}) - 1][\zeta\lambda(1 - \theta - \phi)l_f]}$$

The impact of changes in labour productivity and the allocation of care labor for the macro-economic outcomes can now be investigated explicitly

### 5.1 Impact of changes in allocation to care work and productivity

We begin by abstracting from the mutual impacts of allocation to care-labor and labor productivity on each other, and investigate the immediate impact of independent increases in the two variables on the two sectors

Let us first consider the impact of an increase in labor productivity. From the equations for the formal and informal sector demand sector nullcline we can see that

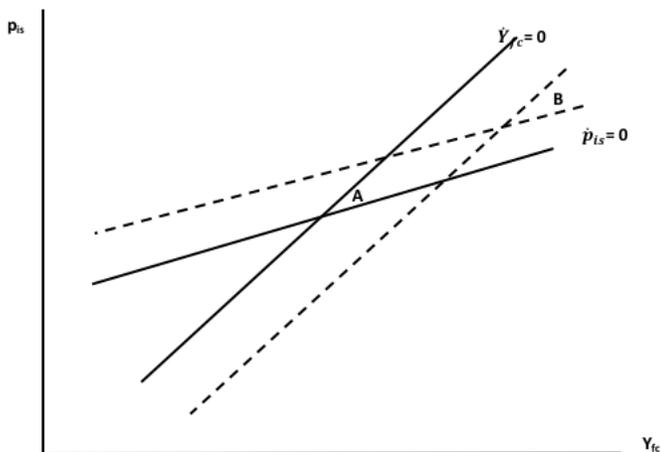
$$\frac{dY_{fc}}{d\lambda} = \frac{[a(1 - s_{is}) + s_{is}][p_{is}(1 - \theta - \phi)l_f]\zeta}{[1 - b(1 - \pi) - (1 - s_{\pi})\pi - \beta]p_{fc}} > 0$$

$$\frac{dp_{is}}{d\lambda} = -\frac{[(1 - a)(1 - s_{is})iB]}{[(1 - a)(1 - s_{is}) - 1][\zeta\lambda^2(1 - \theta - \phi)l_f]} > 0$$

Thus an exogenous increase in labor productivity would lead to a higher formal sector equilibrium output level, shifting the nullcline for the formal sector to the right. It would also shift the nullcline of the informal sector upwards.

Figure 3 presents the impact of an exogenous increase in labor productivity. The new equilibrium will be at a point like B, where both formal sector output and price and earnings in the informal sector rise. Note that an increase in  $\zeta$  (a relative increase in productivity in the informal sector) would have analogous impacts. Conversely a decline in  $\zeta$  would shift the formal sector nullcline to the left and the informal sector nullcline downwards and both formal sector output and informal sector prices and earnings will fall.

**Figure 3: Impact of increase in labor productivity**



We now consider the impact of an increase in the allocation of care labor. The wrinkle is that an increase/decrease in the allocation to care-work can come at the expense of

- a. a decrease/increase in the allocation of time to paid self-employment
- b. a decrease/increase available surplus time.

- c. a decrease/increase in both  $l_{is}$  and  $l_s$ .

We will consider only the first two which can be regarded as two limiting cases

First consider the case where allocation to care labor reduces the time spent on paid self-employment. This could be case for instance where the reproduction needs of the worker's family are such that there is negligible scope to curtail surplus labor time.

The impact on the formal sector output is given by:

$$\frac{dY_{fc}}{d\theta} = \frac{-[a(1 - s_{is}) + s_{is}][p_{is}\zeta\lambda_f]}{[1 - b(1 - \pi) - (1 - s_{\pi})\pi - \beta]p_{fc}} < 0$$

An exogenous increase in the allocation to share labor, and the reduction in in informal sector output, would reduce the equilibrium level of the formal sector output and shift the nullcline to the left.

Turning to the impacts on the informal sector output we can see (from the equation for the nullcline) that

$$\frac{dp_{is}}{d\theta} = \frac{[(1 - a)(1 - s_{is})iB] - (1 - b)(1 - \pi)p_{fc}Y_{fc}}{[(1 - a)(1 - s_{is}) - 1][\zeta\lambda_f](1 - \theta - \phi)^2}$$

$$\frac{dp_{is}}{d\theta} \leq 0 \text{ if } (1 - b)(1 - \pi)p_{fc}Y_{fc} \leq [(1 - a)(1 - s_{is})iB]$$

The effect of an exogenous increase in the allocation to unpaid care labor (at the cost of paid self-employment) is determined by the same condition which determines whether an increase in the informal sector output leads to a decrease or an increase in price in this sector (Eqn 13). But as we have seen equilibrium will only exist if:  $(1 - b)(1 - \pi)p_{fc}Y_{fc} > [(1 - a)(1 - s_{is})iB]$ .

So we will only consider the case where consumption of the informal sector output by the worker in the formal sector exceeds the leakage of demand due to the burden of interest payments and therefore where  $\frac{dp_{is}}{d\theta} > 0$ . The reallocation of labor from paid self-employment to unpaid care, ceteris paribus, reduces output and creates an excess demand that raises price level in the informal sector. An increase in the

allocation of female labor to care work will lead to rise in the price and earnings in the informal sector. The nullcline shifts upwards.

**Figure 4: Impact of an increase in unpaid care labor**

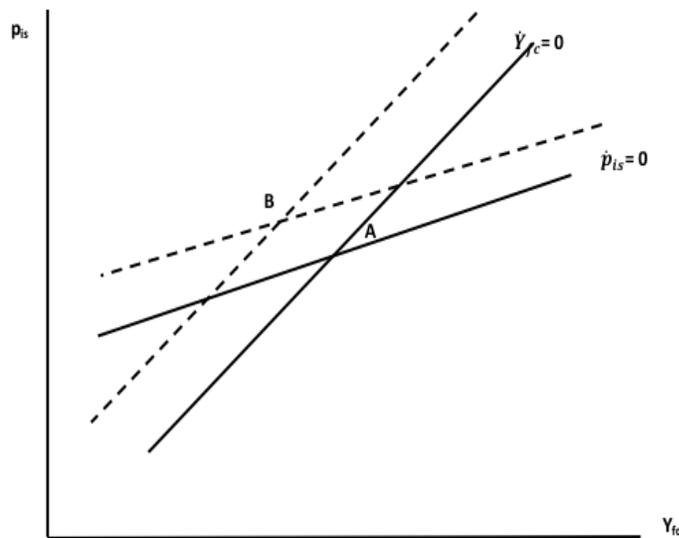


Figure 4 presents the impact of an increase in allocation to care labor. The impact is the opposite of that of an increase in labor productivity. The formal sector nullcline shifts to the left. Since  $\frac{dp_{is}}{d\theta} > 0$ , the informal sector nullcline will shift upwards and the new equilibrium will be at a point like point B, with higher earnings the informal sector, but a decline in the equilibrium formal sector output level.

In the second case where the female worker increases the allocation by squeezing her available surplus labor time,  $|\Delta\theta| = |\Delta\phi|$  so that  $\Delta[1 - \theta - \phi] = 0$ . The allocation to paid employment is unchanged. In this limiting case there is no immediate impact of the increase in care-labor on formal sector output or informal sector prices since the impact of an increased allocation to care work is matched by a decrease of surplus labor.

## 5.2 Interaction of care work and labor productivity

One issue with the preceding analysis is that it neglects the relation between allocation of labor to unpaid care work and productivity. This complicates the shorter run comparative static effects discussed in the previous section. The increased allocation of care labor has a positive impact on labor productivity. However, this impact takes place over a longer period of time than the immediate adjustments to demand that were being investigated in the previous section.

Labor productivity would also depend on earnings of both male and female workers since these allow the workers to substitute market products for unpaid care labor and can also be spent on goods that improve productivity of care labor. Thus male wages ( $w$ ) and informal sector earnings ( $E_{is}$ ) have a positive impact on labor productivity. Informal sector earnings are dependent the price of the informal sector output ( $p_{is}$ ) and the interest payment. An increase in informal sector price will increase earnings and increase labor productivity. A rise in interest rate, would conversely tend to have a negative impact on labor productivity because of the leakage of earnings. The social provision of care ( $c_s$ ) also has a positive impact on productivity. The allocation of care-labor would also have a positive impact on labor productivity. However, whether the increase allocation is due to a decrease in paid self-employment or surplus labor time does matter<sup>5</sup>. Social provision of care ( $c_s$ ) and the level of capital investment ( $k$ ) would also increase labor productivity

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<sup>5</sup> Note that  $\lambda_\theta = -\lambda_{E_{is}} \frac{\delta E_{is}}{\delta \theta} + \frac{\delta \lambda}{\delta \theta}$ . The first term is the impact of a reduction in earnings due to the reallocation of labor from self-employment to unpaid care. The second term is the direct impact of increase in allocation to care on productivity. The increased allocation to care would reduce earnings and therefore also reduce spending on market goods and services that substitute for care work or make it more effective. For  $\lambda_\theta > 0$  the positive impact of care labor on labor productivity must be greater than the loss of labor productivity due to reduced earnings due to lower paid employment. This is the case considered here. Further note that if the increased allocation to unpaid care work is the result of cutting back on surplus labor time  $\phi$ , we could plausibly expect that  $\zeta$  to fall. The squeeze of surplus labor time of the female worker would then reduce informal sector productivity (relative to formal sector productivity), even if  $\lambda$  is not affected because of the increased burden on the female worker's time.

$$\lambda = \lambda(w, E_{is}[p, i], \theta, c_s, k)$$

$$\lambda_w > 0, \lambda_{E_{is}} > 0, \lambda_\theta > 0, \lambda_{c_s} > 0$$

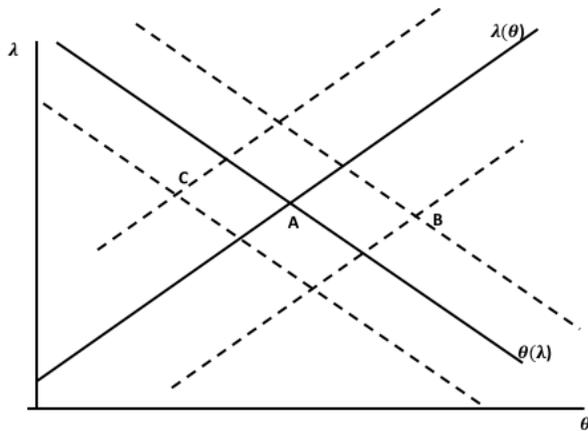
Note that in our approach care-work affects labor productivity in both sectors. It also determines the availability of labor for the informal sector.

The parameter  $\theta$ , the allocation of labor to unpaid care work, depends inversely on earnings in the informal sector, since with higher earnings unpaid care labor would be substituted by market products. Market goods and services could also increase the productivity of care-labor enabling equivalent or greater care ( in terms of both quality and quantity) with the same allocation of labor. An increase in interest rate burden would lead to an increased allocation to care labor, as unpaid labor substitutes for market goods in order to meet interest payments. The allocation of time to care-work would also decline with an increase in labor productivity ( $\lambda$ ) since this would increase earnings ( and the efficacy of care labor). An increase in  $\zeta$  would also enable a reduction in allocation to unpaid care work. An increase in formal sector wages would also lead to a fall in the allocation of care labor, on the same assumption of an increased purchase of market substitutes or complements for care labor. The impact may be less than that of an increase in earnings of the informal sector. Finally the social ( non-market) provision of care ( $c_s$ ) would reduce the necessary allocation to unpaid care work. Thus

$$\theta = \theta(w, E_{is}[p, i], \lambda, \zeta, c_s)$$

$$\theta_w < 0, \theta_{E_{is}} < 0, \theta_\lambda < 0, \theta_\zeta < 0, \theta_{c_s} < 0$$

**Figure 5: Labor productivity and the burden of care work**



We can represent the interaction between labor productivity and the share of care work in female labor time graphically (Figure 5)<sup>6</sup>. This representation helps clarify some basic long term comparative static effects. Starting from a point like A, a fall in  $p_{is}$ , and the consequent fall in informal sector earnings, would shift  $\lambda(\theta)$  downwards and  $\theta(\lambda)$  upwards (to point B). There would be an unambiguous increase in the burden of unpaid care work that would squeeze the labor time of women workers. At point B in the figure labor productivity remains unchanged. The impact of the fall in price on labor productivity, however, is ambiguous. An increase in the interest rate would have similar effects. The burden of care labor would increase but the impact on labor productivity would be ambiguous. Thus the brunt of rising interest is borne by a greater expenditure of unpaid care labor and a squeeze on the labor time of the female worker. This suggests that subsidizing interest rates in microfinance is the more appropriate strategy rather than promotion of for-profit microfinance (and higher interest rates).

An increase in earnings in the informal sector would shift  $\lambda(\theta)$  upwards, and also shift  $\theta(\lambda)$  downwards to point like C, so that the burden of care work is reduced. This implies that the increase in

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<sup>6</sup> The functions are likely to be non-linear. Increases in allocation of care labor would have a greater impact on productivity when the allocation is at a lower level compared to when the allocation is higher. Conversely the reduction allocation of labor time to unpaid care work with an increase in labor productivity would be smaller at higher levels of labor productivity compared to that at lower levels of labor productivity. However, the linear representation of the two functions does not affect the analytical conclusions in a significant way.

wages has enabled a reduction in the burden of care work by enabling the use of market substitutes for care. The impact on labor productivity depends on the shift of the productivity schedule.

An exogenous shock that reduces state and community provided social care services would shift  $\theta(\lambda)$  upwards, so that a higher burden of unpaid care would be necessary. The overall impact would then depend on how  $\lambda(\theta)$  shifts. The cutback on the social provision of care would shift the productivity schedule downwards, implying a reduction in labor productivity along with an increase in unpaid care labor. This suggests that the long term viability of a microfinance strategy of development depends not just on strengthening macro-economic linkages of this sector with the rest of the economy but also by initiatives that expand social provisioning of care.

This admittedly schematic analysis of the interaction of care work and labor productivity suggests that the macroeconomic outcomes of the growth of the microfinance sector need to be comprehended with much greater nuance.

## **6. Conclusion**

In this paper we present a simple model that integrates the role of demand and care work into the analysis of microfinance. What the model underscores is that the output and demand for the informal sector hinges on the broader macro-economic conditions in the economy (represented by the formal sector). A vibrant and stable formal sector is the basis for a stable informal sector. The capacity of microfinance to serve to alleviate poverty and lift incomes is thus dependent on conditions and linkages with the formal sector.

The schematic model also suggests that rising interest rates have an overall dampening effect on demand. The recent transformation of microfinance, as the sector became more closely linked to mainstream finance, has been fostered on the premise that access to credit is a more critical constraint than the price of credit (Cull et al 2009). Donors and development agencies have encouraged raising interest rates in order to ensure the viability and profitability of microfinance institutions. The empirical experience of relatively low rates of default in this sector have also attracted mainstream financial

institutions. In the process the focus has shifted from the sustainability of income generation for borrowers to that of the profitability of the lending institution. Given the higher transaction costs associated with small loans and extending outreach to marginal low income households this change of focus has undermined the social mission of microfinance to reach the poorest and most neglected households.

Finally the paper draws attention to some of the complexities of the impact of microfinance for the provision of care. The original mission of microfinance targeted the female worker with less access to earning opportunities and greater responsibility for the care work. While higher female earnings can alleviate the burden of care by making care work more effective and by enabling the market to substitute for unpaid care, at the lower income levels the responsibility for care remains a critical constraint. Higher interest rates in this sector impose a higher burden on the labor time of the female worker with a consequent squeeze of care labor and/or surplus labor time. If microfinance is to be an effective path to gender empowerment, it would need to be supported by investment in the social provisioning of care.

Thus, microfinance faces a structural constraint on the demand side from overall macroeconomic conditions, and on the supply side from the responsibility for unpaid care work borne by the female beneficiary of microfinance. Paradoxically, microfinance has been espoused as a developmental strategy in precisely the period when the role of the developmental state has been eclipsed and cutbacks in public spending have been prescribed. This paper injects a note of caution and suggests that the success of microfinance as a developmental strategy depends on wider policies that support demand and the social provision of care.

## **APPENDIX I**

The formal sector equilibrium demand condition can be written as the sum of the demand in the formal and informal sector

$$Y_{fc} = D_{is} + D_{fc}$$

Thus

$$\bar{D} = Y_{fc} - D_{fc} = [1 - (1 - \pi)b - (1 - s_{\pi})\pi - \beta]p_{fc}Y_{fc} - [\alpha + \gamma\pi]$$

$\bar{D}$  represents the demand gap ( reflecting an excess supply of the product with respect to own sector demand) for the formal sector output that must be fulfilled by the informal sector for macroeconomic equilibrium.

This implies that

$$\frac{d\bar{D}}{dY_{fc}} = [1 - (1 - \pi)b - (1 - s_{\pi})\pi - \beta]p_{fc}$$

$$\frac{d\bar{D}}{dY_{fc}} \leq 0 \text{ if } [1 - (1 - \pi)b - (1 - s_{\pi})\pi - \beta] \leq 0$$

Thus, the condition for Keynesian stability corresponds to the condition that the demand gap for the formal sector output varies positively with the level of the formal sector output.

Note that in a one sector model, with the worker consuming spending the entire wage (  $b = 1$ ) this condition reduces to  $s_{\pi}\pi - \beta > 0$ . In this case too, the condition implies that there is a demand shortfall as the savings rise faster than investment as income.

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