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Income Volatility and Social Protection in Developing Asia

Vandana Sipahimalani-Rao

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Vandana Sipahimalani-Rao is an independent consultant/researcher and human development economist. She is a former economist at the World Bank (South Asia Human Development). *The author thanks Rana Hasan and Ajay Tandon for their valuable comments and participants of the Asian Development Bank workshop for helpful suggestions.*

Asian Development Bank
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
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FOREWORD

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CONTENTS

Abstract vii

I. INTRODUCTION 1

II. CONSEQUENCES OF VULNERABILITY TO INCOME RISK 2

A. Impact on Productivity and Profits 2
B. Investing in Human Capital 4
C. Unemployment, Income Loss, and Resistance to Reform 7

III. MITIGATING VULNERABILITY TO INCOME VARIABILITY/SHOCKS: THE ROLE OF SOCIAL PROTECTION 8

A. Informal Social Protection Mechanisms 8
B. Formal Social Protection Mechanisms 11

IV. POLICY IMPLICATIONS AND CONCLUSIONS 15

SELECTED REFERENCES 21

ABSTRACT

Most developing countries in Asia have introduced market-oriented economic reforms and face increasing exposure to global markets. Households in these countries thus have greater opportunities to raise their standard of living. However, they also face riskier environments and typically have to cope with greater income volatility. This paper undertakes a critical review of the social protection literature to understand the impact of vulnerability to income risk in developing Asian economies, and the role of social protection in managing that risk. The paper highlights the fact that social protection mechanisms are important in helping vulnerable households mitigate as well as reduce risk, to enable them to invest in high-risk but high-return activities. Thus public policy plays an important role in both protecting and empowering vulnerable individuals. Key policy implications are suggested based on the critical review.

I. INTRODUCTION

Most developing countries across the world including those in Asia have introduced market-oriented economic reforms and face increasing exposure to global markets. While this presents individuals and households with opportunities to raise their standard of living, it also implies they have to confront riskier environments and, in particular, greater income volatility. In agriculture, access to higher yielding varieties of inputs and cash crop cultivation is often accompanied by more uncertainty in crop yields as higher mean yields are usually associated with greater variance as well. In industry, increasing domestic and international competition puts pressure on public and private sector firms to restructure and/or shut down, resulting in increased unemployment and loss of income. This paper undertakes a critical review of the social protection literature to understand the impact of vulnerability to income risk in developing Asian economies, and the role of social protection in managing that risk. The central conclusion of this paper is that policymakers in these countries need to intensify their efforts to ensure adequate social protection to vulnerable households with a two-fold objective: to empower them to cope with increased risk as well as to take advantage of opportunities to improve their standard of living by investing in high-risk but high-return activities.

Social protection aims to assist individuals to transform the negative cycle of poverty into a positive cycle of growth and human development (Ortiz 2001, 41). However, almost 80 percent of individuals worldwide have little or no social protection coverage (United Nations 2005). This paper specifically highlights the effect of vulnerability to income volatility for the poor rural and urban households usually employed in the informal sector as these households are the least adequately equipped to deal with income-related risk. The informal sector is defined differently in different countries. Most definitions include households that are either self-employed or work for employers who hire a small number of workers. However, the informal sector is a heterogeneous group of individuals ranging from contract workers, to self-employed, to home-based workers, to those working for small organizations. According to a recent United Nations report (2005), about 50–75% of nonagricultural employment in the majority of developing countries is in the informal sector. Employment in the informal sector in developing Asia has increased in recent years, making provision of appropriate social protection to them a vital priority for policymakers. (See Felipe and Hasan 2006 for an overview of the growing role of the informal sector in employment).

This paper also focuses on the social protection needs of the urban formal sector dealing in particular with unemployment. As developing countries in Asia move toward more open market policies and strive to be better integrated with the global economy, large-scale retrenchment in the urban formal sector is becoming a reality that they have to contend with. To be competitive in a global economy, many loss-making public enterprises in developing Asian countries are being closed, resulting in large-scale unemployment. Privatization is increasingly becoming a common feature as well. In addition, more liberal labor laws in some countries are making it easier for the private sector to "hire and fire" in order to stay competitive. Policymakers need to make it a priority to provide adequate unemployment benefit compensation and support services to prevent these workers from falling into poverty. Further, protecting workers will have the added benefit of reducing resistance to restructuring programs and a better political consensus for market-oriented reforms.

The paper is organized as follows. This section, Section I, has introduced the issues the paper will discuss. Section II discusses the impact of vulnerability to income risk. Section III describes the informal and formal social protection mechanisms available to households in developing Asian countries for dealing with this income risk. It highlights the relative advantages and disadvantages of these mechanisms. Finally, Section IV draws policy implications based on the critical literature review, suggests priorities for policymakers in these countries, and concludes.

II. CONSEQUENCES OF VULNERABILITY TO INCOME RISK

Households in developing Asian countries are exposed to many kinds of risks. The poor, in particular, are more vulnerable to both natural and man-made shocks. This paper focuses on income-related risks. Households that are already poor are particularly susceptible to income shocks and take decisions to avoid or to cope with them if they have already occurred. Often these decisions cause the households, who are already vulnerable, to further lose income and make them even more vulnerable in the long run. Vulnerability to income shocks and risks can thus make poor households spiral into a cycle of poverty and heightened vulnerability (see Ravallion 1988 for an empirical study of the negative impact of income variability on poverty in India). This section explores some of the key consequences of vulnerability to income volatility for poor households in Asia. It highlights the vicious cycle of vulnerability and poverty.

A. Impact on Productivity and Profits

Vulnerability to income variability could lead individuals and households to underinvest in high-risk activities that maximize productivity and/or profits.

The empirical literature on this issue is fairly extensive for the agricultural sector. The main theme that emerges from this literature is that agricultural households in developing countries are usually faced with highly uncertain environments due to risks associated with the weather and technology. They resort to suboptimal choices to cope with risk due to limited insurance and credit availability. Some households are forced to make decisions to reduce the income risk they are exposed to ex-ante by taking production or employments decisions to smooth income. This is direct income smoothing. Other households make nonoptimal ex-post decisions to deal with the effects of income shocks, i.e., in the face of reduced income they try to smooth consumption through various means. This is called consumption smoothing. Both these ex-ante and ex-post decisions are usually not optimal from the point of view of maximizing current and/or future productivity and profits.

Morduch (1995, 104) explains that agricultural households can use production or employment decisions to smooth income as a self-preservation technique. He cites various income smoothing methods to reduce the variability of agricultural output in order to reduce exposure to income risk, drawing on different empirical studies. He concludes that “mitigating risk through production choices can be costly, since typically expected profits must be sacrificed for lower risk." A common method for income smoothing is to use agricultural inputs less intensively than is optimal to reduce the amount of financial investment in risky inputs. Morduch cites that farmers in North India do this when using fertilizer, for example. "Farmers could substantially raise expected profits by increasing applications of fertilizer, but by using less fertilizer, investment losses are reduced in bad times" (Morduch 1995, 109). Morduch also cites that farmers wait until they have better rainfall information to make production choices, often resulting in reduced profits. Waiting for weather information can help smooth income but it can have a negative impact on crop yields as well. Morduch (199) finds that households in his sample from South India had devoted a relatively large share of land to cultivating less risky varieties of crops like rice and less land to higher yielding but riskier seeds. Eswaran and Kotwal (1989) find that farmers who had more access to consumption credit were quicker to adopt high-yielding variety seeds during the Green Revolution in India in the 1960s.

Selling assets happens ex-post an income shock and is a method used by vulnerable households to smooth consumption. Adams and Alderman (1992) finds considerable empirical evidence of consumption smoothing behavior using panel data from Pakistan. Rosenzweig and Wolpin (1993) estimate a model of agricultural investment behavior using household data from India to illustrate an instance of consumption smoothing. They study the sale and purchase of bullocks that are valuable agricultural assets for these households used for ploughing the fields. They conclude that due to incomplete credit markets and borrowing constraints, households use the sale of bullocks to smooth consumption. They use bullock sales for liquidity when income levels drop due to poor harvests or other income shocks. These households thus sacrifice agricultural productivity since they do not buy/sell the optimal number of bullocks from a profit-maximizing or productivity-maximizing point of view. This leads to further loss of future income since they may not have the optimal number of bullocks for the next harvest season.

The above studies are part of a growing body of literature that illustrates that consumption and production decisions may not be separable in agricultural households for vulnerable households in developing countries, in the absence of complete markets. Both ex-ante (income smoothing) and ex-post (consumption smoothing) are risk coping methods that can be very costly to household from a productivity, profit, and medium/longer-term income viewpoint (see Alderman and Paxson 1992 for a review of the income and consumption smoothing literature). While individuals undertaking income smoothing behavior to avert risk are likely to sacrifice profits and income in the short term, those resorting to consumption smoothing may forego future income (due to a less than optimal number of productive assets, for example). Binswanger and Rosenzweig (1993, 75), for instance, find that "for the bottom wealth quartile, income smoothing would reduce farm profits by 35 percent." The extent of their vulnerability has been reflected in recent years in an increasing number of suicides by poor farmers in India (see Box 1).

Box 1
Vulnerable Farmers Commit Suicide

Some 8,900 farmers committed suicide in the four states of Andhra Pradesh, Karnataka, Kerala, and Maharashtra in India between 2001 to 2006. This is an alarming statistic. Gujarat and Punjab have also witnessed high rates of farmer suicide in recent years. This is particularly distressing since these states (which have seen the largest numbers of farmer suicide in recent years) are agriculturally advanced. The media has largely blamed liberalization, global competition, and new technology for farmers who are increasingly investing in high-value but high-risk crops such as cotton, and are being caught in a debt trap that they feel they cannot escape when crops fail. As Suri (2006, 1526) suggests, "the sequence is more or less the same—heavy investments on inputs, crop failure, inability to pay back the loans and mounting debts leading to suicide." Some media analysis has also highlighted the lack of access to institutional credit as a key culprit leading to indebtedness, with farmers paying exceptionally high interest rates to moneylenders and commission agents (Jodhka 2006). In an interesting survey conducted in Maharashtra (see *Economic and Political Weekly* 2006, 1544), controlling for other factors, Mishra finds that "if outstanding debt increases by Rs.1,000 then the odds that the household is one with a suicide victim increases by 6 percent and if the household owns bullocks then the odds that it is a household with a suicide victim decreases by 65 percent."

It is clear from these observations that indebtness is the major cause of suicide for poor and vulnerable farmers. While new technologies and global competition present opportunities for agriculture, most poor farmers vulnerable to income volatility do not have the resources and facilities needed to take advantage of these opportunities without falling into a debt spiral. It is imperative that policymakers focus on increasing access to credit at reasonable terms and better protection from risk in the form of subsidized agricultural insurance where possible to enable them to free themselves from being dependent on moneylenders and commission agents who charge exorbitant rates and often lock input prices at unreasonably high levels (commission agents often double as input suppliers to poor farmers).

Source: Based on a series of articles in the *Economic and Political Weekly* (2006).

B. Investing in Human Capital

Risk aversion and vulnerability to income shocks/variability can also dissuade other kinds of investments with potentially high returns. Vulnerable households tend to discount the future and any investment decisions of an intertemporal nature could be negatively affected by this discounting. Households sometimes hesitate to invest in the education of their children or pull them out of school due to economic shocks. This can have a detrimental impact on the economy in the long run where human capital investments are suboptimal. In addition, these kinds of decisions can also have the same entrapment effect discussed earlier where vulnerability and poverty perpetuates further vulnerability and poverty due to lack of education.

The literature on this issue is not very extensive. The child labor literature emphasizes the schooling–labor choice that parents make for their children in poor households. The literature focuses, for the most part, on the link between poverty and an increased supply of child labor. While vulnerability is, of course, linked to poverty, most of the studies dealing with child labor and schooling do not address vulnerability, exposure to risk, and their relationship with human capital investment. Nevertheless, some studies do explore this connection.

The traditional investment model of household decision making regarding education for children assumes perfect capital markets in order to enable parents to borrow against future earnings to finance current schooling. Baland and Robinson (2000) propose a theoretical economic model of the household decision where they choose how to divide their children's time between work and school. One of their central conclusions is that child labor is more prevalent where capital markets are imperfect since households are credit-constrained and cannot borrow easily in lean income periods (see Parsons and Goldin 1989, and Ray 2001 for similar theoretical models).

Grootaert and Patrinos (1999) include as one of the key economic variables determining the supply of child labor household ownership of income generating assets. As they explain, "the more assets owned by a household and the more diverse they are, the better its ability to manage risk and the less likely its need to use child labor to insure against income fluctuations" (Grootaert and Patrinos 1999, 20). The empirical studies described in this book find it difficult, for the most part, to distinguish between the impact of poverty and that of vulnerability to income variability on the child labor versus schooling decision. All the studies, including one from Asia on the Philippines, find that belonging to the lowest income/expenditure quintile significantly increases the probability of a child working rather than going to school. The authors venture that this explanatory variable can be an indicator of poverty but also of susceptibility to risk, since these would be the households most constrained in terms of access to credit and insurance. However it is difficult to empirically separate the two effects. Nevertheless since other household characteristics related to poverty are controlled for, it is likely that this finding does imply that risk aversion and income variability (and lack of protection from it) can increase the probability of a child being sent to work instead of school.

Jacoby and Skoufias (1997) is one of the few rigorous studies that explores this relationship. They use panel data from rural India to examine the impact of seasonal changes in the incomes of agricultural households on children's school attendance. They estimate a human capital investment model with uncertainty under various scenarios. The expected theoretical outcomes are summarized in Table 1 below.

Table 1
A Taxonomy of Income Effects on School Attendance

MARKET STRUCTURE	IDIOSYNCRATIC SHOCKS		AGGREGATE SHOCKS (VILLAGE LEVEL)	
	ANTICIPATED	UNANTICIPATED	ANTICIPATED	UNANTICIPATED
Complete intravillage markets				
Complete intervillage markets	None	None	None	None
Intervillage credit only	None	None	None	Yes
Village autarky and:				
Complete intravillage markets	None	None	Yes	Yes
Intravillage credit only	None	Yes	Yes	Yes
Household saving only[1]	Asymmetric	Yes	Yes	Yes
Household autarky	Yes	Yes	Yes	Yes

[1] Also if borrowing is possible but at an increasing marginal cost.
Source: Jacoby and Skoufias (1997, 318).

Table 1 illustrates the expected impact of idiosyncratic and aggregate village-level income shocks on school attendance under different financial market scenarios. For instance, if households face complete financial (credit and insurance) markets, they are "able to reallocate resources across both time and space at fixed prices ... it implies a separation between a household's human capital investment decisions and its consumption decisions" (Jacoby and Skoufias 1997, 316). Income volatility would have no impact on school attendance. At the other extreme, if households are completely autarkic (self-dependent), all kinds of income shocks would be expected to affect school attendance since they would have no means of borrowing to tide over an income downturn.

They conclude from the empirical estimations that parents often do pull their children out of school during times of financial crisis in the face of incomplete financial markets. There are differences in the impact of idiosyncratic and aggregate income shocks across villages but both have a significant negative impact on schooling attendance for the full sample. This is usually done so that children can earn some wages to supplement the household income. This is particularly true for unanticipated income shocks for small farm households that are more vulnerable to seasonal income variability. Thus child labor is used as a consumption smoothing mechanism in the face of lack of other formal or nonformal means by which a household can get credit to tide over the financial downturn. This affects their schooling and, in the long run, could have a substantially negative impact on their education attainment (though direct empirical evidence of the link between attendance and attainment is not available).

Another rigorous empirical investigation of this issue is not for an Asian country but for Brazil. Duryea (1998) use panel data from Brazil and arrive at similar conclusions as Jacoby and Skoufias do for India. They find that unanticipated income shocks in the form of unemployment for the father and the resulting loss of transitory income force many households to withdraw from school or not go on to the next grade (an even stronger conclusion than the impact on school attendance since this paper deals directly with progression through school).

Dehejia and Gatti (2002) empirically study the correlation between vulnerability to income-related risk and schooling/child labor at a macro level using cross-country data. They use panel child labor data for 172 countries and estimate a Tobit model. They conclude that the availability of credit has a strong significant negative impact on child labor even after controlling for income poverty and several other key independent variables. They also examine the effect of income volatility on child labor and find a strong positive association particularly in countries where access to credit is poor, suggesting that poor, vulnerable households use child labor as a means to smooth income in the face of incomplete financial markets. This has a negative impact on child schooling (and leisure time). They find that the coefficient on secondary schooling is, in particular, strongly significant, emphasizing the negative relationship between child labor and schooling (for primary schooling it is marginally significant as perhaps children can combine work and school more easily at this level). This would, in the long run, have a negative impact on the income of the next generation (assuming positive returns to education).

Strauss and Thomas (1994) summarize a set of studies that examine the effect of income vulnerability in the form of income shocks on other human capital investments such as health. They cite Foster (1995) who finds that a major flood in rural Bangladesh, which raised rice prices, caused lower child weight growth among the vulnerable, landless households. They emphasize that "there are very few studies that have attempted to measure effects of resource shocks on human capital outcomes and how existing assets may condition those effects" (Foster 1995, 1982). Clearly more empirical research is warranted in this important area.

C. Unemployment, Income Loss, and Resistance to Reform

The above sections have considered vulnerability to income volatility in terms of how this affects household decisions. As discussed earlier, many of these decisions further enhance the vulnerability of these households to income variability and sometimes deepen the poverty trap.

Vulnerability to income risk can also arise or worsen due to job loss and resulting unemployment. The income loss from becoming unemployed can itself be a crucial blow for vulnerable households (often setting in motion some of the decisions like pulling children out of school, as examined earlier). Labor market insecurity is increasing in transition and developing Asian economies. Economic reform programs are forcing governments to shut down, restructure, or privatize many public sector enterprises. In addition, layoffs are increasingly becoming more common in the private sector in these countries as well, as increasing global competition and market orientation put pressure on firms to cut costs.

Another consequence of being vulnerable to income shocks and not having adequate mechanisms to deal with income loss due to unemployment has been widespread resistance to restructuring and privatization reforms. In 2004, 74 million workers were unemployed in Asian developing countries, and another 426 million were underemployed (Felipe and Hasan 2006). The unemployed are a particularly vulnerable section of the population since most of these countries do not have adequate social safety nets for those who lose their jobs. In the past, job security was guaranteed for workers in the public sector and for many in the private sector in many Asian countries like India. As Felipe and Hasan (2006, 268) comment, "provisions for job security in India's labor code have been a de facto substitute for a system of unemployment insurance insofar as organized sector workers are concerned." However with economic restructuring programs being put in place in many Asian countries as globalization and competitive pressures mount, job security is no longer the norm and downsizing is increasingly becoming common.

The reform and economic restructuring process is quite often significantly slowed down and sometimes even halted due to opposition by workers and trade unions whose jobs are threatened. In most developing Asian countries, the social safety nets provided for those losing their jobs are inadequate (see a more detailed discussion of this issue in Section III) and this heightens their vulnerability, causing them to oppose the restructuring process. Workers sometimes even resort to violence in their frustration, as when retrenched workers in Malawi burned down 10,000 hectares of plantations (Adam Smith Foundation 2006). The 2006 protests in France against a proposed law that would make firing of youth easier illustrate that these are burning issues even in developed countries. The widespread labor disputes in People's Republic of China (PRC) in the late 1990s despite government efforts to provide increased safety nets reflects the vulnerability of workers who lose their jobs, even in the formal sector, and the reality of resistance to reform that many governments have to contend with (Nielsen, Nyland, Smyth, and Zhu 2005).

As the above discussion elucidates, vulnerability to income risk and shocks can have a debilitating effect on households in developing Asian economies. Shocks can often push households on the brink of poverty into becoming poor if they do not have adequate formal or informal mechanisms to deal with them. Exposure to risk can also cause vulnerable households to make decisions that reduce risk at the expense of productivity and enhanced future income—in the form of agricultural decisions or those regarding the health and education of their children. All of these decisions often push these households in a downward spiral of poverty and vulnerability, sometimes trapping them in a vicious cycle that is difficult to break out of.

III. MITIGATING VULNERABILITY TO INCOME VARIABILITY/SHOCKS: THE ROLE OF SOCIAL PROTECTION

The discussion above provides a compelling argument on why governments should provide adequate social protection mechanisms to mitigate and reduce vulnerability. In addition, this section will make the argument that it is critical for Asian governments to have policy frameworks that support useful informal social protection mechanisms that are already prevalent as well as those provided by the private or nongovernmental sectors.

Traditionally, the advocates of social protection schemes have focused on their "coping" aspect, i.e., the fact that they enable people to deal with the adverse effects of shocks. More recently, international literature has emphasized providing various forms of social protection to enable individuals, particularly those who are often exposed to shocks, to undertake risky activities. The World Bank "Social Protection Sector Strategy" paper (World Bank 2001) sets out a social risk management framework where social protection policies act not only as safety nets but also as "springboards" to enable vulnerable households to break out of the poverty–vulnerability trap by investing in building human capital and making profit-maximizing decisions. Needless to say the "safety net" aspect continues to be important as well.

A. Informal Social Protection Mechanisms

Poor and vulnerable households in developing countries, including those in Asia, are capable of dealing with some income risk without formal social protection provided by the government. Skoufias and Quisumbing (2004) use five household data sets from developing countries (including Bangladesh and Russia) to understand the extent to which households are capable of insuring consumption from economic shocks to real income using informal means. They conclude that households use a portfolio of strategies, but that different types of households may have differential ability to use these strategies. Besley (1995) summarizes a variety of informal risk coping and sharing mechanisms and uses the term "non-market" institutions as an overarching term for the variety of mechanisms used in practice.

The informal methods discussed by Skoufias and Quisimbing (2004) and Besley (1995) include the kinds of income and consumption smoothing methods such as the sale of productive assets, use of child labor, and other decisions to avert risk discussed in the earlier section on vulnerability. In addition, transfers and remittances among family, neighbors, and friends; and loans or the use of savings and household stores, are other informal means used by households to deal with income falls due to shocks. Paxson (1992) finds using data from Thailand that household savings respond to transitory income shocks. Platteau (1991) explains that transfers and loans among family members or neighbors are used when there are "contingencies uncorrelated across the group" (Ahmad et al. 1991, 141). Unni and Rani (2001) find that social networks in Gujarat, India, help in times of financial crisis. In a survey they designed for a sample of households in the state of Gujarat, 90%

of households "reported the existence of such a social network to bail them out in times of financial crisis" (Unni and Rani, 2001, 39). Agarwal (1991) illustrates how vulnerable households diversify income sources by, for example, migrating seasonally, using mixed cropping, and drawing on the labor of women and children in lean seasons. Rosenzweig and Stark (1989) conclude using data from rural India that households that have more variable farm profits have a greater probability of having a member employed in nonfarm activity as a means of income diversification.

Besides these individual and ad-hoc informal arrangements, there are also more institutionalized informal arrangements that vulnerable households use to mitigate income risk. Most of these involve some kind of group risk sharing. Platteau (1991) discusses a more institutionalized informal risk pooling method he labels co-operative labor-exchange pools where pool members commit to helping each other out during any misfortune without expecting payment. What they expect, in return, is similar help in their time of need. Bardhan (1984) highlights the continued presence of some tied labor contracts even in the modern age and argues that they exist because they are mutually beneficial to both employers and employees—they enable the laborers to mitigate their vulnerability to low income during lean seasons when other employment may be hard to find, and enable landlords to pay lower wages than they would otherwise have to in peak seasons.

Besley (1995) describes mechanisms like credit cooperatives, rotating savings and credit associations (ROSCAS), and group lending. Credit cooperatives, he explains, take advantage of local enforcement and information—they borrow from a bank and then on-lend to their members. ROSCAS are a variant of this informal lending mechanism found in many countries including Asia (e.g., India; Republic of Korea; Taipei,China), where groups get together and pool their funds in a pot of funds that goes to one member by lot or bidding every period. ROSCAS can assist members with risk sharing in the event of income or health shocks that occur during the rotation cycles (Calomiris and Rajaraman 1993). Group lending (which has become more widespread as inspired by the success of the Grameen Bank in Bangladesh) involves loans being given to groups that are then jointly liable to pay them back. As Besley suggests, group lending "acts like a kind of forced risk-sharing arrangement" since each member's payoff depends on all the other members' productive use of the loan.

Most studies on the informal sector and/or informal social protection mechanisms are descriptive in nature. It is imperative to empirically observe whether these methods are effective solutions for the informal sector in terms of mitigating their vulnerability to income risk. However, there are only a few studies that attempt to do this in a rigorous manner. Nevertheless, several studies do document the advantages that informal mechanisms have, in some cases, over more formal systems. They also discuss the weaknesses and limitations of these mechanisms.

Agarwal (1991) quotes a study that found empirical evidence that living in a joint family setup as prevalent in many developing economies can actually help improve agricultural productivity. Informal coping mechanisms help these households cope better with agricultural risk enabling them to make more risky choices. All the risk-sharing institutions discussed above (cooperatives, ROSCAS, group lending etc.) share the feature that it is easier for individuals/households to monitor each other when there is repeated contact between them and they know each other well, as is the case in the villages/neighborhoods where these methods are seen used. Belsey (1995) calls this the peer monitoring view. Agricultural insurance, for example, sometimes fails, whereas these more informal institutions are successful in reducing vulnerability to risk for households in villages where information problems abound and legal contracts are often difficult to enforce. Formal bank loans also fail for the same reason. Enforcement is also often easier when informal mechanisms are used for similar reasons of better local knowledge. Hence the adverse selection and moral hazard problems faced by formal institutions in providing social protection are minimized when informal institutions are used for mitigating income risk.

Many studies conclude that family patronage systems and informal systems of social protection work well when the shocks experienced by households are not of a catastrophic nature and/or are experienced for an extended period (see World Bank 2001, Agarwal 1991). "These (informal) mechanisms seemingly work for most but not all of the population if the shock is idiosyncratic and not catastrophic, but they fail under a protracted and severe crisis" (World Bank 2001, 7). Households that do not have social protection other than relying on their informal networks are usually still very vulnerable to shocks that affect an entire community or village such as famines or floods since informal risk sharing breaks down under these circumstances.

Townsend (1995) summarizes the results from few empirically rigorous analyses of risk sharing in the informal sector. He reports studies using data from Cote D'Ivoire, India, and Thailand. His study finds that, in general, incomes of a village or region are much less covariate than would be expected. The data reveal that there is, indeed, risk sharing among households in a village or region using informal means. However, this is not complete risk sharing. Studies from various countries find, using household data, that while there is some risk sharing, it is often imperfect and poor households are usually still vulnerable to risk. These include Townsend (1995) for India (discussed above), Deaton (1992) for Cote D'Ivoire, Townsend (1995) for Thailand, and Jalan and Ravallion (1999) for the PRC. Skoufias and Quisimbing (2004) also use data from five countries (including Bangladesh and Russia in Asia) and conclude that households are only partially able to insure.

In addition, across the board these studies find that richer households with assets/landholdings were better able to deal with idiosyncratic risks whereas poorer households and those without any land were often vulnerable even to idiosyncratic shocks. It is often these households that are forced to deplete their meager assets when faced with an emergency, and this pushes them into poverty. They are often the households that use the income and consumption smoothing strategies discussed in Section II. However, as argued earlier, these can be costly ways of protecting oneself against risk since households often have to sacrifice current or future income when they make these decisions. In addition, some of these choices, such as using household stores of food grains, can be detrimental to women and girls in the household as gender biases in food allocation in times of shortage are well documented in the literature (Agarwal 1991). As Morduch (1995) observes, "even where informal insurance is well developed, public actions that displace informal mechanisms can yield net benefits."

The informal risk sharing mechanisms detailed above such as ROSCAS and group lending schemes do not have the disadvantages of individual coping methods that households use to smooth income or consumption. In addition, they have the advantage of reducing the adverse selection and moral hazard issues faced by formal institutions. Nevertheless, in practice, they have seen mixed success. Cooperatives, for example, become financially unviable in many countries especially when their design does not take into account mass defaults due to covariant risk factors (Besley 1995). Also, as economies develop, the presence of these traditional informal institutions declines over time especially as better monitoring technologies emerge, indicating that they are not the preferred option in modern economies.

As the above discussion reveals, research indicates that not being covered by formal social protection programs does not necessarily imply that an individual is substantially more vulnerable to risk. Households have various risk coping mechanisms that work well to buffer them against shocks and make them less vulnerable. However, many of these mechanisms do not work well when a catastrophe strikes or negative shocks such as famine occur for a long period. More formal mechanisms and state intervention are required to ensure that transient poverty does not rise and these households do not suffer. Also as some of the articles mentioned above argue, informal risk sharing and coping arrangements can have costs that are not desirable such as decisions that compromise productivity and investment in human capital. As some of the studies discussed illustrate, informal risk sharing is not perfect and may still expose households, particularly those that are very poor, to substantial risk. The poorest households are still often vulnerable even to idiosyncratic shocks. Sometimes informal mechanisms do not work well because of problems of enforcing repayment among households, or because a household is unable to reciprocate a transfer. Morduch (1995) states "these (informal) mechanisms can be highly effective in the right circumstances, but most recent studies show that informal insurance arrangements are often weak." Thus public social protection programs are required and need to be well targeted using indicators of the ability of households to self-insure against shocks where informal mechanisms may not buffer certain households.

B. Formal Social Protection Mechanisms

What formal social protection mechanisms exist in developing Asian countries? A wide range of programs are in place in different countries. These are usually grouped under five categories: social insurance programs (such as unemployment and health insurance, pensions etc.); social assistance and welfare programs; labor market programs; micro and area-based schemes usually aimed at the informal sector; and child protection programs. There are several books and articles that discuss all these mechanisms in detail (see Ortiz 2001 for a good overview for Asia). This paper focuses on those mechanisms (similar to the discussion of informal mechanisms) that are specifically designed to mitigate income risk and, in particular, empower vulnerable individuals and households to take intertemporal decisions without compromising productivity and future income to enable them to escape the poverty–vulnerability trap.

(i) *Social assistance mechanisms*

Social assistance mechanisms play an important role in developing Asian economies. These are critical to the most vulnerable individuals and households and include cash transfers, short-term cash, and in-kind transfers to cope with negative shocks and longer-term poverty reduction measures such as in-kind subsidies (see Ortiz 2001 for more details). Ortiz cites how several social assistance mechanisms have been successful in Asian and Pacific countries and "can support growth with equity and bring about success in poverty reduction for vulnerable groups" (Ortiz 2001, 307). This contradicts widespread claims that they create households that become permanently dependent on the state and are too expensive to implement. However, many in-kind subsidy schemes (e.g., fertilizer subsidies) have not been effective and research indicates that they have benefited the better-off, rather than the very poor (World Bank 2001). Most countries are attempting to reduce these subsidies.

Nevertheless, there are certain subsidies such as scholarships for school fees and free health care for the poor that are essential to continue. Another useful subsidy being increasingly used in developing Asia is free midday meals for children in public schools. These subsidies help vulnerable households avoid having to resort to child labor as a means of income support and withdrawing their children from school when they experience an income shock. The schooling and child labor literature is extensive and there are a host of policy measures that governments take to curb child labor and encourage vulnerable households to send their children to school (for good reviews see OECD 2003, Grootaert and Patrinos 1999). The measures focused on here are those related to mitigating income-related risk for vulnerable households to enable them to send their children to school rather than to work.

(ii) *Economic incentives*

Economic incentives are provided in various countries to mitigate income poverty and enable poor households to send their children to school instead of work. These include scholarships, free school meals, free uniforms, books, transportation etc. While these are not necessarily targeted at helping households deal with vulnerability to risk, they nevertheless help in this regard as well, since households do not have the cash to spend on their children's schooling particularly during lean periods or when they have suffered an income shock (OECD 2003, Sipahimalani 1999, Dreze and Kingdon 1999). Midday meals in India have met with great success in some states such as Tamil Nadu in terms of their impact on increasing enrolment in school (Sipahimalani 1999). The school nutrition program in Pakistan and the Food for Schooling program in Bangladesh have also been successful in increasing school enrolment and reducing dropout (OECD 2003). Some programs in Latin America have linked cash transfers to households to school enrolment or attendance, and have been very successful in increasing human capital investment by increasing both enrolment and attendance by mitigating household vulnerability to income risk. These include the Bolsa Scola program in Brazil and the Progresa program in Mexico (OECD 2003). Sometimes school fees can be waived during an economic crisis to prevent people from pulling out their children from school and also from falling into a "transient poverty trap." This was done with success in Indonesia during the financial crisis (Sayed and Filmer 1998). Expanding the reach of subsidized health insurance continues to be an important priority in developing Asian countries, and vulnerable households can be forced not to seek medical help if they are not insured and have suffered an income loss.

(iii) *Public works*

Public works are another formal social protection mechanism useful in helping households cope with temporary income shortfalls. These are programs where the unemployed and underemployed are given temporary jobs usually in building and repairing infrastructure. They have been used fairly extensively in India and Korea, for example, and have the advantage of being self-targeting. They could, once again, be useful in helping households tide over lean income periods instead of having to resort to selling assets or pulling their children out of school to send to work.

(iv) *Social funds*

Social funds can be seen as a recent variant of the public works approach to providing employment for the chronic poor or communities hit by economic or other disasters (Ortiz 2001). They are agencies in government that are set up to assist local communities by financing small-scale projects, usually in infrastructure, based on local demand. They are relatively new in Asia, starting as recently as 1999. While it is too early to evaluate their impact, they are useful in post economic crisis situations such as the social funds set up by the World Bank in Indonesia and Thailand in order to help the communities cope with large-scale economic crises where informal mechanisms usually fail. Their key advantage is the autonomy they enjoy compared to usual government programs, and the fact that they are designed based on the demand of local communities, and can be well targeted. Evaluations of social funds in other countries have revealed that "the poverty impact of improving schools, clinics, water supplies, access roads etc. are well established" (Ortiz 2001, 444). However, their sustainability is uncertain and the fact that they divert resources from strengthening other mainstream government interventions remains controversial.

(v) *Agriculture insurance*

Agricultural insurance (including micro insurance) is an important tool used by policymakers to provide social protection to mitigate income risk, particularly for small farmers. It enables vulnerable farmers to choose the optimal mix of inputs and make productivity-maximizing decisions. In practice, however, it is plagued by many implementation obstacles such as problems of adverse selection and moral hazard mentioned earlier (pitfalls that are, in fact, avoided by informal risk sharing methods such as ROSCAS). In addition, risks that befall the entire group that is insured (covariant risks) often make these schemes financially unviable. As Abada (2001) notes, "schemes implemented so far in the developing countries have not been particularly successful and some have had to be discontinued or substantially modified." Abada (2001) quotes a study that found high loss ratios in seven developing countries (including India, Japan, and Philippines). Thus agricultural insurance almost always has to be publicly subsidized and private agricultural insurance is not usually viable.

Vulnerability to income shocks resulting from unemployment in the formal sector is another issue that policymakers in Asia increasingly have to deal with. It has resulted in privatization and economic restructuring programs usually being met with widespread resistance by labor unions and often from the public at large, as discussed in Section II. Most of those who lose their jobs have been accustomed to job security in the past. In addition, most Asian developing countries do not have well-developed social protection systems for the unemployed. As losing one's job becomes an inevitable reality of the 21st century in these economies, governments need to focus on developing social protection mechanisms that protect the unemployed and make job loss more palatable, while still keeping these mechanisms affordable. These mechanisms are referred to as labor adjustment programs defined by the Adam Smith Institute (2006, 1) as "government led programs to help reduce the negative consequences of enterprise reforms."

In developed economies, unemployment insurance and assistance are controversial policies. Most studies have concluded that unemployment benefits increase unemployment since they reduce the incentive to search for a new job. Calmfors and Holmlund (2002) summarize the evidence from various developed countries to conclude that there is considerable support for the hypothesis that lower benefit levels and shorter entitlement periods associated with unemployment insurance reduce unemployment.

However, developing countries offer a different scenario since they are usually not near full employment level and as discussed earlier, often have a majority of workers working in the informal sector. If viable unemployment benefits are offered to workers in such a situation, it is expected that this would be beneficial as it would enable workers, particularly in the informal sector, to take risks and look for better paying jobs. This would help create a more flexible labor market. In addition firms would be more willing to hire workers during boom periods if labor laws allow them to lay off workers more easily. The opposition to restructuring programs and reforming rigid labor laws would also decrease if better social safety nets are in place.

Hu (1994) finds in his study on the PRC that reforming the social safety net system has been crucial to increasing labor market flexibility there. He claims that "China's experience … suggests that, without removing rigidity in the labor market, the social and economic costs of necessary enterprise restructuring in terms of employment would be too high to be politically sustainable" (Hu 1994, 4). He goes on to explain that the traditional system of social protection in the PRC for the large public sector was firm-based, tying the employee to a particular firm and discouraging labor mobility. Loss-making state-owned enterprises had substantially higher labor costs than their private counterparts due to overstaffing and unsustainable social benefits; moreover, competitive pressures were forcing them to restructure and lay off redundant staff. In 1986 a big step toward labor market flexibility was introduced where a policy decision was taken to hire all new workers as contractual workers. In addition, SOE managers could now legally lay off workers. However, laying off is not a common practice largely because this has faced widespread opposition due to the tradition of social safety nets being associated with the firm an employee works for. Thus, "increasing labor market flexibility, a necessary condition to transform the state-owned sector, has called for overhauling China's social security system" (Hu 1994, 19). Unemployment insurance at the local government level has been introduced as the cornerstone of this new system. Further evaluations will be needed to study the impact of this scheme on resistance to reform.

Fretwell (2004, **page???**) reviews various social support programs for workers losing their jobs due to privatization in Brazil, transition economies in Eastern Europe, and Western Europe. He concludes that while a broad spectrum of mechanisms is used in different countries, the key to successful programs is "direct dialogue between key stakeholders (including workers) both before and during the restructuring program." A working document by The Adam Smith Institute (2006) reiterates the importance of dialogue, particularly with workers and unions early on in the process of restructuring or privatization in order to build support for reform.

What unemployment benefits can be offered in lieu of job security in developing Asian economies as job losses become a reality for many workers? A range of options are available to policymakers in Asian developing countries to provide better social safety nets for unemployed workers. The choices they make will have to balance the benefits to workers and their families as well as the benefits of reduced resistance to privatization and more flexible labor laws with the costs of providing social safety nets.

In most developed countries unemployment benefits are provided on a regular basis in the form of unemployment insurance or unemployment assistance. However most developing countries including those in Asia do not provide unemployment insurance/assistance on a regular basis, which are expensive options for most of these economies during periods of restructuring/privatization. These are long-term institutional developments that need to be considered on a country-by-country basis. The unemployment benefits usually considered by developing countries are specific to the context of enterprise restructuring and privatization that leads to large numbers of workers being retrenched.

These include income support programs and nonincome-related support programs or labor services. Most labor programs consist of some income component in the form of a severance payment and/or pension payments as well as other labor services including retraining and redeployment/counseling.

Some programs also involve employees owning shares in the new firm, if any. Severance can include wage arrears, regular severance, and/or special severance to encourage workers to quit voluntarily. As the Adam Smith Institute (2006, 18) states, "in developing a severance scheme the main challenge lies in devising severance payments that are both attractive for workers and financially affordable and sustainable." The details of alternative types of severance schemes are not relevant here. The key issues involved are appropriate targeting of packages to prevent adverse selection and putting in place financing arrangements to ensure speedy implementation. Felipe and Hasan (2006) find, in an extensive review of labor market policies in Asia, that severance pay and the cost of firing workers is generally higher in Asian countries compared to Africa and industrialized countries (and about the same as in Latin America). Rama (1999) explains that the voluntary approach to retrenchment can be quite expensive and can also lead to the most skilled workers with best outside employment options leaving (adverse selection). Targeting by offering severance packages only to workers identified as redundant through studies and analysis might be a better option.

Redeployment programs or labor services are a key element of support to the unemployed that Asian developing country governments use to varying extents. They are meant to assist workers who lose their jobs to be reemployed gainfully in a short period of time. Fretwell (1999) and Betcherman, Olivas, and Dar (2004) find that these programs have a significant positive impact if carefully targeted and well run. The caveat that the programs should be well run is an important one. The programs provided need to be demand-driven to prove useful to the workers. Services provided as redeployment programs range from training/retraining, counseling, job search assistance, placement services, and assistance for self-employment for small entrepreneurs.

IV. POLICY IMPLICATIONS AND CONCLUSIONS

In the past, policymakers viewed social protection mechanisms as tools to help vulnerable households cope with and mitigate risk. This paper illustrates that the conventional thinking on the role of social protection mechanisms has evolved so that they are now also considered important for reducing risk to enable vulnerable individuals to invest in high-return activities. This is particularly important in a increasingly competitive and market oriented global environment where new but often riskier technologies and opportunities are available. Enabling vulnerable households to take advantages of these would not only improve their welfare but also stimulate economic growth through more productive use of assets and inputs and higher human capital accumulation.

In the medium to long term, policymakers need to reduce chronic poverty which is, not surprisingly, one of the strongest correlates of vulnerability to income risk. Nevertheless, policies aimed at empowering vulnerable individuals and households to mitigate risk and deal with income variability in the short term also helps lower transitory poverty, which is often a major component of overall poverty. The previous section detailed some pros and cons of various informal and formal social protection methods. This section draws lessons for policy based on that discussion.

(i) Thinking outside the box: creative thinking and cross sectoral approaches to designing social protection programs

Traditionally, social protection mechanisms have entailed either social insurance or assistance of some kind. However, as discussed earlier, it is often the case in developing countries that some of these methods are either financially unviable and/or ineffective in protecting vulnerable individuals from income risk due to various reasons. For example, unsubsidized weather insurance does not help farmers undertake riskier activities with higher returns since there are cheaper alternatives to smoothing consumption. In fact even subsidized agricultural insurance may be beset with problems such as adverse selection, moral hazard, and covariant risk. In such situations a "conventional" social protection policy of agricultural insurance may not be the answer to mitigating and reducing agricultural risk.

On the other hand, creative solutions such as helping provide consumption credit (so that farmers do not get caught in debt traps with high-interest charging moneylenders as their only option for borrowing) may be effective in enabling farmers to invest in profit-maximizing behavior. Consumption credit would help smooth consumption, allowing the farmer to take riskier decisions to maximize profits without worrying about falls in consumption for the household. Eswaran and Kotwal (1989) demonstrate that in agrarian economies, consumption credit can, in fact, sometimes assume the role of insurance. They explain that consumption credit markets allow risk pooling, thus enabling individuals to smooth consumption without resorting to nonoptimal choices. They find that farmers who had access to consumption credit were more likely to adopt high-yielding variety seeds during the Green Revolution in South Asia, for example. This is a good option to insurance schemes since it enables risk pooling across time, and usually the "random factors generating uncertainty" that may be covariant across farmers are not correlated across time. In addition, "credit contracts economize on information" and are usually easier to implement than agricultural insurance contracts that have proven to be very information-intensive and an administrative burden. Thus, Eswaran and Kotwal (1989, 50) conclude that "although credit is used exclusively for consumption stabilization, it has a positive impact on production behaviour." Biswanger and Sillers (1983) find similar results in their study where they engaged farmers in several developing countries in small gambles as an experiment. They found that the differences among farmers in their readiness to adopt new technologies was less due to differences in risk preferences and more due to the availability of, in that case, production credit.

Similarly, in order to help income smoothing, for example, increasing opportunities for farm household members to get jobs with assured salaries may increase the efficiency and stability of agricultural output (Rosenzweig and Wolpin 1993). Having a household member who has a stable income could enable a farmer to make profit-maximizing agricultural decisions without worrying as much about income variability due to the high risk nature of any of these choices.

In their subsequent study on the relationship between incomplete financial markets and children's schooling, Eswaran and Kotwal conclude that complete credit markets can have a beneficial impact on human capital investment as well. This finding is supported in other empirical studies discussed in Section III. Thus, while providing access to consumption credit is not usually defined as a social protection measure, it has the beneficial impact of allowing vulnerable households to take decisions without compromising productivity and current/future income, and decisions on human capital investment. This finding is echoed by Grootaert and Patrinos (1999, 161) when they state "programs are needed to provide credit to poor households without collateral so that they no longer need to rely on their children working as insurance against falling income." Dehejia and

Gatti (2002) is the only empirical study to investigate the relationship between financial markets and child labor decisions in a rigorous manner at a macro cross-country level. As detailed earlier, they find that income volatility has a significant impact on child labor. In addition, they split their sample of countries into a "high credit" and "low credit" group (by access to credit) and conclude that countries with better access to credit income shocks do not significantly affect child labor decisions. More importantly, extending the ability of households to insure against income shocks has a distinct advantage over legal restrictions and direct bans as it can decrease child labor without lowering family welfare (Dehejia and Gatti 2002, 12). Decreasing child labor would, of course, help in increasing human capital investment, as more children are sent to school and have increased leisure time as well.

In the example discussed here, the link between financial markets and human development has been emphasized. Policymakers may provide scholarships or other economic incentives to encourage households to send their children to school instead of work (in addition to the regular programs of building more schools and hiring teachers etcetera). However, these policies are unlikely to increase human capital investment for households that are very vulnerable to income risk. Cross sectoral linkages in designing programs could involve, for example, providing these economic incentives but also improving household access to micro credit or consumption credit through formal means like cooperative banks, or encouraging informal means like ROSCAS.

The more general point is that policymakers should break the sector silos when designing programs for social protection, as such coordination across sectors and ministries could have a very beneficial impact on risk reduction and mitigation. Thinking creatively out of the box could help policymakers focus on designing mechanisms that are not conventionally considered social protection and, sometimes, eliminate schemes such as some agricultural insurance schemes that are ineffective and financially unsustainable.

(ii) Social assistance: the importance of targeting and an integrated approach

While it is imperative that policymakers take into account cross sectoral linkages and unconventional social protection mechanisms, some established social assistance schemes to protect the most vulnerable households from income volatility continue to be critically important. It is crucial in most developing Asian economies that child protection schemes be prioritized to enable sustained human capital investment by the poor, particularly during lean income periods. Careful analysis and planning is needed to ensure that social assistance and child protection programs are well targeted and prioritized in a cost-effective manner. Administration costs also need to be curtailed to make the programs financially sustainable. Policymakers could seek out public–private–nongovernment organization (NGO) partnerships to make delivery and implementation more cost-effective and better targeted; since area-based NGOs often have better access to local information to enable targeting. As Van Ginneken (2003) explains, accurate income figures are difficult to obtain in developing countries. Therefore targeting using other indicators such as assets and self-selection has been more successful. This paper also emphasizes that targeting methodologies have to be simple so that they are transparent and easy for local government officials to implement. Geographical targeting is useful during regional crises (Ortiz 2001).

Social protection programs in general and social assistance schemes in particular are usually not very well integrated within the development framework of Asian developing economies. This makes targeting and evaluation of the effectiveness of schemes very difficult. In addition, having a proliferation of disjointed schemes makes it complicated for policymakers to make implementing agencies accountable for outcomes. As Justino (2003, 7) comments, "the focus of social security policies in developing countries should thus be on the reduction and mitigation of structural forms of vulnerability and on the implementation of ways of coping with all types of risk and be integrated within the overall development strategy of the country rather than implemented as individual programmes."

(iii) Formal and informal mechanisms: defining relative roles and building linkages

Section III elaborated upon various traditional or "informal" social protection mechanisms used by households in developing Asian countries. Some methods of mitigating risk used by households such as depleting assets to smooth consumption or making nonoptimal production decisions to smooth income are clearly detrimental to households and the economy at large. Nevertheless as seen in Section III, there are other informal risk-sharing methods such as transfers and gifts, rotating savings, and credit schemes or group insurance schemes that are very effective at protecting households without sacrificing productivity and profits particularly in the case of idiosyncratic shocks. In some cases they work better than formal schemes because of the advantages of local information and peer monitoring. Nevertheless, as Ahmad et al. (1991) highlight, and the World Bank (2001) Social Protection Sector Strategy reiterates, informal social protection mechanisms usually break down in the face of catastrophes or shocks of a protracted nature. Van Ginneken (2003) observes many unemployment and poverty rates soared in many East Asian countries during the 1997 financial crisis partly because households relied largely on informal social protection mechanisms. Asian governments and multilateral institutions have since then reconsidered and begun to focus on the role of formal social protection arrangements particularly to mitigate income risks when catastrophes strike. Dhanani and Islam (2002) discuss the case of Indonesia during and after the 1997 financial crisis and conclude that government social protection mechanisms of rice subsidies and education scholarships were key to softening the impact of the crisis even though they were scaled to a national level only a year after the crisis hit. They conclude that formal social protection mechanisms need to be in place before a crisis hits (even those measures that are intended as short-term ones to enable risk coping during a crisis need to have enabling policies and legislations in place beforehand) to enhance their impact. Public work programs continue to be an important but temporary measure governments can use to help tide over difficult economic periods for households in the informal sector.

In some situations, however, substituting informal mechanisms might be socially optimal if these mechanisms are harmful to the households. Also, certain regions in a country may not have well-developed informal mechanisms. The role of public safety nets is more critical here. In addition to designing and implementing formal social protection schemes, policymakers should also create a regulatory and institutional framework to encourage appropriate private coping mechanisms and discourage others that are harmful to productivity or have other negative consequences. Morduch (1999) emphasizes this point, explaining that policymakers can help improve regulation and strengthen institutions to help households in the informal sector get access to better credit, insurance, and savings options. Providing access to good savings instruments is essential as is creating useful regulations for an enabling environment for banks and NGOs to help households save. Direct insurance programs by governments have not been successful as cited earlier. Governments need to further exploit opportunities to facilitate private and NGO-provided insurance to reduce the moral hazard problem, as NGOs often have better local information. Governments can provide appropriate subsidies/guarantees, enabling legislation, and reinsurance support to create a supportive framework. Another interesting area for public policy to support informal mechanisms is by improving legal rights of certain groups like women to own assets such as land to improve their access to credit (World Bank 2001). The World Bank summarizes this public policy role succinctly when it states that "the development community needs to find ways to support, or "crowd in" pro-development informal mechanisms to make them more effective and inclusive and discourage, or "crowd out" the detrimental ones" (World Bank 2001, 35).

Policymakers can also attempt to link some formal schemes to informal ones to enhance the joint impact of both kinds of programs on vulnerability. Social funds, which are formal social protection mechanisms set in place by governments, for example, have been successful when they are community-driven since they are created to finance small-scale projects on the demand of communities. In fact, as Abada (2001) cites, empirical evaluations have revealed that social funds are not well targeted in practice and are not very effective for the very poor and vulnerable. Involving local NGOs in partnership with the local governments is a good way to ensure more community input into their design and implementation to improve their performance. Newer social funds such as one in Zimbabwe (the Community Action Project) are attempting to combine government and informal insurance mechanisms. The local government head of the village keeps a plot of land aside whose produce is meant for vulnerable households to cope with shocks. The community provides the agricultural labor required for production (World Bank 2001, 37). Policymakers should undertake more experimentation and pilot projects and evaluate these projects to find ways for formal and informal social protection schemes to work together to maximize their influence.

(iv) Social protection for the unemployed: maximizing impact in a cost-effective manner

The discussion in Section IIIB reveals that unemployment is a growing concern for formal and informal sector workers as most developing Asian economies are now pursuing market-oriented reforms. The labor adjustment programs that governments usually put in place to deal with these mass layoffs have been described in that section. It is vital that policymakers structure these programs so that they maximize impact in terms of benefits for the workers (and the related impact of reduced resistance to market-oriented reforms) while being cost-effective. Very high severance packages, as mentioned earlier, are common in Asian economies and these have the disadvantage of sometimes being financially unfeasible and often causing the best workers to leave (adverse selection). To overcome these disadvantages the formula to calculate severance pay should be carefully thought of using one of several approaches: setting minimum and maximum levels; reducing payments to workers near retirement; or a loss-based formula that takes into account factors such as seniority, gender, and education to predict the welfare loss of each worker and compensate the worker accordingly (Adam Smith Institute 2006). Asian governments need to study these alternatives and choose the appropriate method for each case.

Section IIIB also mentions redeployment programs that usually form part of the labor adjustment programs. These include labor services such as training, counseling, and job search assistance, among others. These can be cost-effective while at the same time very beneficial to unemployed workers.

However, the kinds of services offered and method of implementation are crucial to their success. International experience has shown that demand-driven and well-targeted services are more successful in improving the re-employment opportunities for laid-off workers (Adam Smith Institute 2006). Traditionally the government has tried to undertake all the training through its own institutions in most developing countries in Asia, sometimes diluting the quality and usefulness of the training. Implementation should be done by well-qualified agencies, whether private, nongovernmental, or public. While they are usually not very expensive, funding needs to be in place to ensure that there are no delays in implementation. One option would be to use funds from privatization (Fretwell 2004). The PRC experience (Betcherman et al. 2004) illustrated that in longer-duration training programs, workers funding part of the training costs and programs other than those offered by the official labor bureaus were associated with higher gains in employment. Fretwell (2004) also emphasizes the importance of ongoing evaluations of these programs and cautions against generalizing across countries. There are very few evaluations in developing countries, which is an essential requirement in the future to enable policymakers to make more informed choices. Betcherman, Olivas, and Dar (2004) summarize the available evaluations of retraining workers after mass layoffs in seven developed countries, one transition economy, and one Asian country, the PRC. Results are mixed, with the PRC study showing uncertain impact on employment. In the PRC, the evaluation revealed that participation in retraining led to increases in employment (in one of the cities), while, in the other city, the employment effect was insignificant (Betcherman, Olivas, and Dar 2004). Clearly many more rigorous evaluations of these experiences are required for developing countries.

Most developing Asian economies do not have ongoing active labor market programs (ALMPs) of the kind seen in industrialized countries. As these countries increasingly grapple with unemployment issues, it is important to ask the question, should ALMPs be introduced in these countries? The evaluations of ALMPs in developed economies show mixed results. Betcherman et al. (2004) review over 150 evaluations of ALMPs and conclude that a wide range of results can be found with some programs demonstrating positive labor market effects and others showing either no impact or even negative effects. Nevertheless, the small number of studies and ALMPs available in developing countries indicate that the impacts of ALMPs here may be different from that in developed economies. While weaker implementation capacity sometimes lowers the quality and impact of services provided, the potential to train large numbers of workers who need the training remains. More research needs to be done, however, before governments embark on a large scale to undertake ongoing ALMPs in developing Asian economies since these can often involve substantial finances.

An issue that is of critical importance in developing Asian economies is the absence of social protection in the form of any kind of unemployment benefit for workers in the large and growing informal sectors. Labor market reforms will have to take this sector into account to provide at least a basic level of protection to these workers. Some developing countries have begun to take steps in this direction. In Chile, for example, unemployment benefits for the informal sector financed mainly from value-added tax revenues have been introduced with moderate success (World Bank 2004). In India, the parliament is likely to discuss a bill to introduce social security for the "unorganized" sector. The bill proposes to finance this scheme using a combination of nominal worker contributions, employer contributions (where possible), and central and state government contributions. Policymakers in developing Asian economies will need to focus on providing some unemployment benefits to the informal sector workers who are growing in number.

This paper addresses the issue of providing adequate social protection against income volatility for those particularly vulnerable to income shocks and risk. It draws on available literature to focus on the negative impact of vulnerability. We conclude that vulnerable households that do not have access to adequate protection from income risk are likely to get caught in a vicious cycle of poverty and vulnerability. In addition, they often hesitate to invest in high-return activities that have higher risk such as adoption of new technology in agriculture. Sometimes, as in the case of many farmers in India who have committed suicide, they suffer terrible financial consequences if they do adopt the higher-risk technologies but have a bad harvest. In the urban formal sector, the reform process may be slowed down as workers without adequate social protection oppose restructuring. This paper summarizes the various informal and formal social protection methods and programs in developing Asian countries. An analysis of the pros and cons of these schemes and their operation leads us to recommend that policymakers need to intensify efforts to provide adequate social protection to households in the informal sector and to those who might get unemployed in the urban formal sector as well. It is vital that policymakers in developing Asia think creatively and across sector barriers about how to achieve a higher level of good quality social protection, and empower people to take advantage of the opportunities offered by new technologies and global competition. A more integrated approach to planning and implementation along with better targeting is critical to the success of schemes. Furthermore, policymakers should provide an enabling environment for informal mechanisms that are beneficial to flourish. At the same time policy should discourage those methods that are harmful or that sacrifice profits and productivity, while providing appropriate formal alternatives. More empirical research and evaluation is certainly warranted in this area to understand linkages across sectors and evaluate the impact of formal and informal programs.

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About the Paper

Vandana Sipahimalani-Rao undertakes a critical review of the social protection literature to understand the impact of vulnerability to income risk in developing Asian economies, and the role of social protection in managing that risk. The paper highlights the fact that social protection mechanisms are critical to help vulnerable households *mitigate* as well as *reduce* risk to enable them to invest in high-risk but high-return activities.

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