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Shifting Women's Work from the Home to Market: Assessing Policies for Economic Growth in Taiwan

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If one accounts for the shift of women's work from the household to the market during the course of economic development, what does the trajectory of growth and structural change look like? Economists do not typically consider this aspect of economic development. But if a significant proportion of growth is propelled by such a shift, then analyses of growth will mistakenly attribute social and economic policies with production expansion when what is really happening is a sectoral shift.

One would expect this oversight to be biggest in cases where economic growth is accompanied by large increases in female market labor force participation. In this brief, I summarize an accounting of one such shift by looking at the role of women in Taiwanese growth between 1965 and 1995, a thirty-year stretch when Taiwan had an enviable per capita market growth rate of 6.9 percent.¹ This growth was mirrored by changes in female labor force participation, which increased from 33 percent in 1965 to 45 percent in 1995. (At the same time, male labor force participation experienced a steady decline, from 83 to 72 percent.) The Taiwanese case is especially relevant to current debates about growth and development because the female- and labor-intensive export-led growth model is still held up as one to emulate.

I estimate the effect of the shift of work from home to market by developing an alternative measure of economic production that accounts for both market and household production in the form of unpaid domestic services provided by women in the home. The result is a reevaluation of growth over the course of Taiwan's export boom. I find that social services, a category that includes services provided in the market and the home, was the lead employer of Taiwanese labor between 1965 and 1995. Another key finding is that many of the factors driving growth in the market sector also shape growth in the household sector. Despite trend declines in the relative size of the household sector, it has probably continued to grow throughout

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¹ A full accounting is contained in PERI Working Paper No. 24, available at www.umass.edu/peri.

this period, primarily because of productivity gains in household production and the effects of demographic change. At the core of this conclusion is the assumption that opportunity wages are a fair measure of the monetary value of women’s work in the home.

The Domestic Service Sector in Taiwan

Beginning with employment, how big is the unpaid domestic service sector relative to other sectors in Taiwan? Table 1 details the sectoral composition of the Taiwanese labor force at various points in its industrial development. It includes the category “housework,” the term used to refer to the work of women engaged in unpaid household work full-time. In 1965, the unpaid domestic service sector was second only to agriculture in employment. Later, agriculture declined significantly and industry, especially manufacturing, became the main employer of Taiwanese labor. Even though the proportion of women working solely in the home declined, the early dynamics of the demographic transition guaranteed continued expansion in the home sector.

Table 1. Sectoral Composition of the Labor Force in Taiwan (*thousands*)

	agriculture	industry	commerce	business services	social services	housework
1965	1,748	1,019	389	40	568	1,667
1975	1,681	2,242	775	88	736	2,011
1985	1,297	3,466	1,336	190	1,114	2,491
1995	954	3,972	1,919	534	1,664	2,624

Notes: Agriculture also includes forestry and fishing. Industry includes manufacturing, mechanical and mining. Business services includes finance, insurance, real estate and business; social services includes social, personal and public administration, all in the paid sector; housework denotes all those counted outside the labor force who were classified as primarily engaged in “housekeeping.”

Source: Directorate General of Budget, Accounting and Statistics, *Statistical Yearbook of the Republic of China*, various years.

Table 2 presents the sectoral distribution by employment, but it also includes those whose primary occupation was unpaid housework as a part of the labor force in the category “social services.” Looked at this way, social services has been the primary sectoral employer in Taiwan since the beginning of its industrialization boom in the mid 1960s. Even though industrial employment gained a significant number of jobs, social services continued to hold its own. This interpretation provides a different perspective than that which is widely emphasized in the literature. Despite the shift away from agriculture and into industry that is often cited as a marker of development, the importance of social services never appreciably waned.

**Table 2. Sectoral Distribution of the Total Labor Force in Taiwan
(percent of paid plus unpaid workers)**

	agriculture	industry	commerce	business services	social services
1965	32%	19%	7%	1%	41%
1975	22%	30%	10%	1%	36%
1985	13%	35%	14%	2%	36%
1995	8%	34%	16%	5%	37%

Note and sources: See table 2, except for the category social services, which now includes those counted as doing unpaid housework. Paid plus unpaid workers equals the market labor force plus those counted as doing unpaid housework.

These figures do mask, however, the shift in the relative size of the household sector as expanding market growth drew more labor out of the home and into the marketplace. In the next section I will quantify these differences more precisely by assessing growth in the unpaid domestic service sector in terms of the value of its labor inputs.

Growth and Structural Change in Market and Domestic Production

In order to estimate the value of women's nonmarket household work in Taiwan, one needs to derive an expression for the money value of women's nonmarket production in terms that can be estimated using available data. The model I used is a simple model of household production that renders the monetary value of household production in terms that include: the average female market wage; the elasticity of output with respect to labor inputs in the household production function; the rate of substitution between household and market work; the average work time of women who do no market labor; and the amount of household work done by women who also have a job in the market. A key assumption of the model is that market wages are a reasonable estimate of the monetary value of women's nonmarket work time.

Starting off with a comparison of total market (M) and nonmarket (N) production, the simulations indicate that the relative size of the household sector declined significantly, going from about 31 percent of market sector size in 1965 to 17 percent in 1995. But the decline is not a consistent one. There was an upswing in the size of the household sector in the mid-1970s that will be discussed more completely below. If one counts only housewives (leaving out the issue of the rate of substitution between market and nonmarket work), the figures are 26 and 13 percent respectively. Because of the substantial decline in nonmarket work when women take a paying job that is assumed in this model, and because of the continued significance of full-time housekeeping in the Taiwanese economy, women who work only in the home dominate the trajectory of domestic production.

To what extent has this decline in the relative size of domestic production affected extended (M+N) growth? Table 3 presents five-year averages for per capita real growth rates of

market, nonmarket, and extended (M+N) production. Accounting for the household sector pulls down overall growth an average of 0.43 percent per year between 1965 and 1995. But the effect varies in direction and magnitude over time.

Table 3. Comparing Market and Extended Per Capita Real Growth in Taiwan, 1965-95

	Market (M) only	Nonmarket (N) only	M + N
1965-69	6.00%	3.12%	5.33%
1970-74	8.07%	3.77%	7.17%
1975-79	8.01%	10.22%	8.42%
1980-84	5.43%	0.04%	4.43%
1985-90	7.24%	6.77%	7.16%
1991-95	5.67%	3.63%	5.36%
30-year avg	6.80%	4.71%	6.37%

Source: Author's calculations. The key assumptions used here are that the rate of substitution between market and nonmarket work is -0.75 , meaning that for every hour worked in the market, household labor time declines by 45 minutes, and that the elasticity of household output with respect to labor inputs is 0.75 .

In the first two decades considered (1965-84), the household sector had its greatest effect on growth. Between 1965 and 1974, slower growth in the household sector lowered extended GDP growth rates by about 0.9 percent a year. In the period 1975-79, however, the household sector somewhat compensated for the oil crisis-induced slowdown in the market sector, contributing an average of 0.41 percent a year to extended GDP growth and drawing it up to an 8.42 percent per capita growth rate. This result is consistent with women's market employment being pro-cyclical – when the economy slows down, women's work shifts back to the household sector.

The next five year period, 1980-84, carried with it a recession in 1981-82 spurred by the second oil crisis, but this time growth in the household sector lagged behind market GDP, depressing extended per capita growth to an average of 4.43 percent a year as compared to 5.43 percent for per capita market growth. There are two reasons for this. The first is that female real wage growth was significantly negative in the three (inflationary) years 1980-82, meaning that the real value of domestic output declined as well (since it is valued using opportunity wages). Secondly, the proportion of housewives in the working population declined in what became a counter-cyclical pattern of women's market employment, contrary to the late 1960s and early 1970s.

By the late-1980s, household sector growth continued to lag behind that of market GDP, but the size of the consequent slowdown in extended GDP was much smaller than earlier periods (0.09 percent in 1985-90 and 0.31 percent in 1991-95), primarily because the size of the household sector relative to that of the market sector continued to decline throughout the entire period.

What is impressive about these figures is that despite the trend decline in the proportion of women working at home full-time between 1965 and 1995, the nonmarket sector continued to grow a per capita average of 4.71 percent. Continued growth is to a large extent due to productivity improvements (as measured by opportunity wages) in the household sector. And to a lesser extent growth is due to the age structure effect, where despite the decline in the housewife participation rate, the number of women engaged primarily in unpaid housekeeping has continued to increase since the mid 1960s.

What might these numbers look like if opportunity wages used to measure the household sector stayed the same between 1965 and 1995, that is, there was no productivity growth in the domestic sector? Average per capita growth in the household sector would decline to -0.33 percent annually, a significant difference from the 4.71 percent figure when productivity is allowed to increase along with the market sector's. Per capita extended (M+N) growth would decline to an average of 5.95 percent a year, as compared to the 6.37 percent extended growth and 6.8 percent market growth in table 3. This difference is significant, but perhaps not as much as one might expect in light of the dramatic declines in nonmarket sector participation.

The Role of Demographic Change

Population dynamics arose as a key determinant of the simulation results above. The role of demographic change is important because the demographic transition took record time in East Asia. In Europe, it took more than one hundred years. In post-war East Asia, it took about thirty, resulting in an incredibly compressed demographic gift to growth - the dramatic increases in worker to population ratios throughout East Asia during the high growth decades.

There are two ways the demographic gift affected the nonmarket sector that are relevant to the issue of growth and structural change. First, the growth effects of the demographic transition's change in age structure are evident in the nonmarket as well as the market sector. Even though the participation rate for full-time household work has been on the decline, the total number of women choosing nonmarket work has continued to increase because of the peaks in population growth in the 1950s. And even though many women have chosen paying jobs, they still do some nonmarket work in the home. Despite the decline in the *proportion* of women doing full-time household work, the demographic gift contributed to continued growth in this sector simply because the number of women doing any amount of housework relative to the entire population increased so dramatically.

To understand the structure of this effect in the nonmarket sector, I use a measure I term the "housekeeping dependency rate," or the ratio of youth and old age dependents to women doing full-time housework. In 1965, this rate was 353, meaning that there were about 3.5 youth and old age dependents per full-time housewife. By 1995, this number had declined to 193, giving 1.9 youth and old age dependents per full-time housewife. Even though these figures do not account for the housework time of women in the paid labor force, it is clear that the sheer numbers of women primarily engaged in housekeeping and continued fertility decline sidestepped what might have been a contraction in the nonmarket sector.

How much did the demographic transition "give" to the nonmarket sector during this period? If one reruns the simulations maintaining the age structure in 1965 but letting all other

factors vary, estimates for nonmarket growth rates decline by an average of three percentage points, cutting these rates by about half. Looking back at Table 3, that means nonmarket growth only reaches a thirty-year average of 2.35 rather than 4.71 percent. Depriving the nonmarket sector of its demographic gift does not completely reverse its growth, but it does take out a substantial proportion.

The second way that the demographic gift has affected the nonmarket sector is by changing the composition of care. As fertility declines and the population ages, less care time is spent on young children and more on the elderly, with probably an overall decline in care time relative to physical maintenance and management time. These issues could also affect one's assessment of the productivity of nonmarket work – but only a more detailed analysis of time use would offer the information necessary.

These points do indicate, though, that there is a potential down side to the demographic gift, both in the nonmarket and market sectors. The large cohort of workers with lower fertility that swelled the relative ranks of the economically active population will eventually become elderly, and the demographic gift could become a drain on the working-age population. In terms of the overall dependency rates covered above, although the rate continues to decline, the elderly constitute an increasing share of dependents. In 1965, those 65 and over constituted 5.6 percent of all dependents; in 1995 that share had risen to 24 percent.

Conclusion

Raising the market labor force participation of women, especially women with high levels of human capital (measured in terms of education and health) was a key feature of the Taiwanese miracle. These contributions were to some extent at the expense of the household sector, but not as much as one might expect looking at the raw numbers due to productivity gains in the household sector and the demographic gift. Low unemployment and the continued expansion of labor demand was an important partner in this course because real wage growth made working for pay an avenue for expanding consumption and enhancing investments in children, rather than a way to cope with economic hardship.

From a development perspective, the Taiwanese case contains some important lessons about growth and structural change in extended production. In the most general sense, it was found that many of the factors driving growth in the market sector spurred growth in the household sector as well, a finding that may seem counter-intuitive in light of the dramatic changes in female labor force participation. Enhancements in labor productivity and fertility decline worked in similar ways in the two sectors, indicating the importance of productivity-enhancing public investments in human as well as household capital. These investments not only augment labor's direct contributions to growth, they also preserve production in the household sector in ways that complement the continued supply of high-skilled labor. Still, these complementarities probably occurred in a context of increased total work time for women, where women who worked for pay continued to provide some amount of nonmarket labor.

The gifts of productivity increases and fertility decline that underlie continued growth in the household sector could slow down and even reverse in the near future. As the relative proportion of the elderly population grows, changes in the composition of care toward the elderly

necessitate more careful thinking about how the composition of care affects the productivity of nonmarket work, and about how social policy can help ensure that increased demands on the household sector are met by increases in the productivity of labor rather than greater work loads for women.