

Appendix A

The meaning and qualification of the main variables

	Variable	Variable interpretation	A measure of variables
Dependent variable	<i>YI</i>	Yield	Yield per unit area of grain crops
	<i>G_{TFP}</i>	TFP growth rate	Based on the C-D function, the output elasticity of the element is estimated, and the growth rate of TFP is further calculated
Key variables	<i>D₁</i>	Dummy variable	<i>D</i> ₁ = 1 indicates the traditional mode of production in which men and women make joint decisions and produce together; <i>D</i> ₁ = 0 indicates the incomplete feminization mode of production in which the male labor force makes decisions and the female labor force produces
	<i>D₂</i>	Dummy variable	<i>D</i> ₂ = 1 indicates the complete feminization mode of production in which the female labor force makes decisions and produces; <i>D</i> ₂ = 0 indicates the incomplete feminization mode of production in which the male labor force makes decisions and the female labor force produces
Main control variables	<i>LS</i>	Size of labor force	Total number of labor force engaged in agricultural production
	<i>LH</i>	Health status of labor force	Average health status of members of the family labor force engaged in agricultural production
	<i>LE</i>	Education level of labor force	Average education level of members of the family labor force engaged in agricultural production
	<i>LA</i>	Age of labor force	Average age of members of the family labor force engaged in agricultural production
	<i>AT</i>	Agricultural training status of production decision-makers	Have production decision makers been trained in agriculture: 1= yes; 0=no
	<i>CF</i>	Nuclear family ¹⁾	1=yes;0=no
	<i>K_M</i>	Capital investment in grain production unit area ²⁾	(yuan)
	<i>L_M</i>	Labor input in grain production unit area	(day)
	<i>L_N</i>	Number of plots	(plot)
	<i>SC</i>	Social capital	Whether the decision-maker is a party member (1= yes; 0=no). If it is the traditional decision-making model, the information of male decision-makers shall prevail.

Note: TFP is total factor productivity.

Appendix B

Regression results of the yield model of three major grain crops

Variables	Yield (kg mu ⁻¹)					
	Rice		Wheat		Corn	
	OLS	FE	OLS	RE	OLS	RE
Key variable variables						

¹⁾ The nuclear family refers to a family consisting of two generations. The members of the nuclear family include two spouses and their unmarried children.

²⁾ Capital input refers to the total sum of seed cost, fertilizer cost, pesticide cost, agricultural film cost, irrigation cost, livestock cost, machinery cost and so on.

Type of peasant household¹⁾						
Traditional type	17.00*** (4.34)	26.05*** (6.72)	67.39*** (2.72)	57.14*** (2.56)	22.31*** (3.99)	20.60*** (3.85)
Complete type	15.71** (6.00)	21.26* (9.45)	37.41** (3.78)	34.63** (3.53)	80.20*** (6.27)	75.37*** (5.98)
Control variables	✓	✓	✓	✓	✓	✓
F/Wald- χ^2	151.15***	13.20***	12.79***	3807.1***	47.36***	1890.1***
Hausman test(χ^2)	3.46		444.79***		70.91***	

¹⁾Incomplete type is defined as the base group.

*, ** and *** were marked at the level of 10, 5, and 1%, respectively; the parenthesis was the standard error of the estimation coefficient. ✓ represents that such variables have been added to the models as control variables.

Appendix C

The regression results of the total factor productivity model

Variables	Growth Rate of TFP (%)					
	Wheat		Rice		Corn	
	OLS	FE	OLS	FE	OLS	FE
Key variable variables						
Type of peasant household¹⁾						
Traditional type	0.05*** (0.02)	0.01 (0.02)	0.08*** (0.01)	0.04*** (0.02)	0.04*** (0.01)	0.01 (0.02)
Complete type	0.04* (0.02)	0.04 (0.03)	0.05*** (0.02)	0.02 (0.02)	0.05*** (0.02)	0.0003 (0.03)
Control Variables	✓	✓	✓	✓	✓	✓
F/Wald- χ^2	34.64***	9.29***	27.03***	8.05***	27.04***	7.67***
Hausman test(χ^2)	21.14		22.36		25.19	

¹⁾Incomplete type is defined as the base group.

*, ** and *** were marked at the level of 10, 5, and 1%, respectively; the parenthesis was the standard error of the estimation coefficient. ✓ represents that such variables have been added to the models as control variables.

Appendix D

Regression Results of TFP Growth Rate

Variable	Growth rate of TFP (%)		
	Wheat	Rice	Corn
	RE	RE	RE
Key variable			
Type of peasant household¹⁾			
Traditional type	0.03** (0.02)	0.07*** (0.01)	0.03** (0.01)
Complete type	0.03* (0.02)	0.05*** (0.02)	0.04** (0.02)
Control variable			
Average health status of family labor (1=bad;2=middle;3=good)	-0.004 (0.01)	0.01*** (0.01)	-0.01 (0.01)
Average age of household labor (yr)	0.00003 (0.0003)	-0.0003 (0.0002)	-0.0002 (0.0003)
The average number of years of education of household labor force (yr)	0.003 (0.002)	0.0002 (0.002)	0.002 (0.002)
Whether the labor force has participated in agricultural training (0=no; 1=yes)	-0.02 (0.02)	0.002 (0.01)	-0.01 (0.02)

Whether or not the core family (0=no; 1=yes)	-0.017 [*] (0.01)	0.010 (0.01)	0.001 (0.01)
Number of plots (plots)	-0.006 ^{***} (0.002)	-0.004 ^{***} (0.001)	-0.001 (0.001)
Whether the decision maker is a member of the party (0=no; 1=yes)	-0.014 (0.01)	-0.003 (0.01)	-0.01 (0.01)
Constant	3.43 ^{***} (0.07)	5.05 ^{***} (0.10)	3.90 ^{***} (0.11)
Province dummy variables	Omit	Omit	Omit
Observation number	8673	10687	13137
F/Wald- χ^2	1179.61 ^{***}	1030.42 ^{***}	993.41 ^{***}
Hausman test(χ^2)	21.14	22.36	25.19

¹⁾ Incomplete type is defined as the base group.

^{*}, ^{**}, and ^{***} were marked at the level of 10, 5, and 1%, respectively; the parenthesis was the standard error of the estimation coefficient.