TIANJIN, China—Chinese Premier Wen Jiabao Tuesday pledged to maintain steady economic growth, and defended his record at the helm of the nation's economy for the past 10 years.

Mr. Wen, speaking at the World Economic Forum in Tianjin, said he expects the domestic economy to stabilize and that the country is on track to meet its official target of a 7.5% rise in gross domestic product this year.

"We will give greater priority to stabilizing growth...We have full confidence that the target for China's economic growth this year will be met," he said.

Acknowledging that the Chinese economy is under "notable downward pressure," Mr. Wen said the government has introduced several measures since May to support growth, all of which have also been conducive to its long-term reform goals.

These measures have included tax reform, lower taxes for smaller enterprises, cuts in interest rates, and more flexible interest rates, as well as cuts to the level of required reserves for banks, he said.

Mr. Wen pledged to maintain steady growth of money and credit, and to stimulate growth in consumption and investment.

He also hinted at massive fiscal spending to support the economy, saying that China has a budget surplus so far this year of about 1 trillion yuan ($158 billion), and some 100 billion yuan in a special reserve fund, "which we will not hesitate to use for the fine-tuning of the economy."

Mr. Wen also mounted an extensive defense his record as premier since 2003. He is set to retire following a leadership transition this fall, when he is expected to be replaced as premier by Vice Premier Li Keqiang.

"I have served my country for 45 years and in a few months I will retire," he said.

Mr. Wen touted the progress made under his watch toward achieving progress on various fronts. China has introduced measures to narrow its massive income gap, ameliorate regional disparities in development, improve environmental regulation, and lay out a basic system of social benefits, he said.

He was particularly forceful in defending China's massive stimulus campaign during the global financial crisis in 2008 and 2009. Many analysts give China credit for the package of stimulus policies, which arrested a sharp slowdown. But the stimulus plan also had many long-term costs, including inflation, soaring property prices that threatened to form a bubble, and a buildup of questionable loans at state banks.

"Some people made accusations about China's plan...and even said that we paid an undue price," he said. "It was exactly due to our resolve and scientific response that China was able to prevent factory closures and job losses."

"We maintained social stability and prevented a disruption to the process of modernization."

Write to Aaron Back at aaron.back@wsj.com