

rately owned and managed, so that they can compete effectively against each other. That way, politicians' tasks could be delegated to the technical people (mostly economists) who can compare marginal prices and marginal costs. That, and not fixing the price of cable television subscriptions, is what governments should be aiming at. □

No CBT for NPT

Hopes that there would be a test-ban deal before the NPT must be renewed are fading fast.

THE twenty-fifth anniversary of the Nuclear Non-Proliferation Treaty (NPT) falls next year. In just six months, there will be a conference at Geneva at which the present parties to the treaty, getting on for 150, will have to agree (or otherwise) to the continuation of the treaty. That fateful occasion appears to have stirred up very little dust in the big wide world. To be sure, the United States has brokered what may be a useful deal with North Korea, but the state of nuclear weaponry in the former Soviet Union remains confused and a threat to peace. The problem for the nuclear powers, most of whom want to prevent the spread of nuclear weapons, is that they will need to win continuation of the NPT with tangible proofs that they have wound down the arms race of the Cold War. A Comprehensive Test-Ban Treaty would by itself have been sufficient.

Now, alas, the prospects of such an agreement between the existing nuclear powers are poor. The negotiating teams at Geneva have just awarded themselves a long recess, and can hardly be expected to secure this prize in the few weeks they will have in which to tinker with the treaty before the NPT conference begins. By some accounts, France has made the most clamant objections to a deal, but Britain has also been insisting on the need for tests of the Trident warheads now being built. China, a participant at the talks, has by contrast been comparatively silent on the subject, perhaps counting on France and Britain to keep the argument for continued testing bubbling away. It is all a bad business, which needs to be tackled with more urgency than any government (the American included) appears to sense. □

Big Bang gone quiet

Cosmologists had better say something about the recent measurement of the Hubble constant.

LIKE the Sherlock Holmes dog that failed to bark, cosmologists have been remarkably silent about the two measurements of the Hubble constant reported in the past few weeks (M. J. Pierce *et al. Nature* **371**, 385–389; 1994 & W. L. Freedman *et al. Nature* **371**, 757–762; 1994). The essence of the case, it will be recalled, is that it has been possible to identify stars that resemble Cepheid variables in other galaxies of the Virgo galaxy-cluster and, using them as better standard candles than any previously available, to estimate the scale

of the apparent speed of the expansion of the Universe. That is Hubble's constant, which, at about 80 km per second per megaparsec, is near the high end of range in which previous estimates of this quantity have clustered.

Remarkably, the first of these measurements was carried out at the Canada–France–Hawaii Telescope in Hawaii. Although the age of the Universe inferred from this figure must depend on other assumptions there seems little doubt that the inferred age of the Universe is nearer 10 billion years than twice as much, and that the Universe is therefore 'younger' than some of the stars in the globular clusters of our own Galaxy, which appear to be older than some 14 billion years.

On the face of things, then, the new measurements are a blow for the Big Bang account of the beginning of the Universe, although not necessarily a fatal one. It could, for example, be the case that the motions of the two Virgo galaxies in which the apparent Cepheids have been found are so inaccurately known that their use as standard candles is misleading. Or it may be that what appear to be Cepheids in the two other galaxies nearer the centre of the Virgo cluster are somehow systematically different from those used in the past half century as the most reliable indicators of distance in the local galaxy. Or maybe the standard model of the expansion of the Universe needs correction. Any or all of those explanations would be credible, and even creditable. But a continued silence will only give the world the impressions that the cosmology of the past 30 years is under a cloud. □

Regressive taxation

The British government has hit on a way of making taxation popular and seeming to be fun.

THE British have been in a fever of literal speculation for the past two weeks, handing over pound (sterling) coins for a chance to participate in the brand-new national lottery, launched on 13 November by the prime minister, Mr John Major. Evidently, he was not for nothing Chancellor of the Exchequer for a brief spell; the lottery organizers collected £37 million in the first week of operation. Roughly half of that will go to the government, and a quarter to what are called good causes, notably the arts, various aid organizations and a fund with which to mark the coming millennium.

As a gamble, the British lottery is therefore not a good buy. Casinos with roulette wheels offer a much better chance of winning back, and more, what gamblers call their 'investment'. So, oddly enough, do slot-machines. The organizers are a company called Camelot. They say they will photograph all the winners of prizes exceeding £10,000 to make sure that those concerned are not laundering tainted money.

In reality, the most eager participants in the lottery will be those most in need of riches, mostly the poor. Occasionally, of course, they will win but mostly half of their investments will go straight to the Treasury. Voluntary taxation would be the proper name for what is planned. Only a clever government could make regressive taxation popular. □