PIC Optimization Example

```
const char str[] = “test";

extern char havePrinted;

bool foo(int i)
{
  do{
    havePrinted = 'a';
    if (havePrinted && !false) {
    ((void)0);
    havePrinted = str[i];
    }
  }while (0);

  return false;
}
```

[GCC]

```
        ldr     r1, .L3
        ldr     r2, .L3+4
.LPIC1:
        add     r1, pc
.LPIC2:
        add     r2, pc
        ldr     r2, [r2]
        ldrb    r3, [r1, r0]
        movs    r0, #0
        strb    r3, [r2, #0]
        bx      lr
.L4:
        .align  2
.L3:
        .word   .LANCHOR0-(.LPIC1+4)
        .word   havePrinted(GOT_PREL)+(.-
(.LPIC2+4))
```

LLVM Result Comparison

[BEFORE]

```
        ldr.n   r1, .LCPI0_1
        ldr.n   r3, .LCPI0_0
.LPC0_0:
        add     r1, pc
        ldr.n   r2, .LCPI0_2
        add     r3, r1
        ldrb    r0, [r3, r0]
        ldr     r1, [r2, r1]
        strb    r0, [r1]
        movs    r0, #0
        bx      lr
        .align  2
.LCPI0_0:
        .long   _ZL3str(GOTOFF)
.LCPI0_1:
        .long   _GLOBAL_OFFSET_TABLE_-
(.LPC0_0+4)
.LCPI0_2:
        .long   havePrinted(GOT)
```

[AFTER]

```
        ldr.n   r1, .LCPI0_0
        ldr.n   r2, .LCPI0_1
.LPC0_1:
        add     r1, pc
        ldrb    r0, [r1, r0]
.LPC0_0:
        add     r2, pc
        ldr     r1, [r2]
        strb    r0, [r1]
        movs    r0, #0
        bx      lr
        .align  2
.LCPI0_0:
        .long   _ZL3str-(.LPC0_1+4)
.LCPI0_1:
.Ltmp0:
        .long
        havePrinted(GOT_PREL)-
((.LPC0_0+4)-.Ltmp0)
```